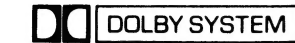
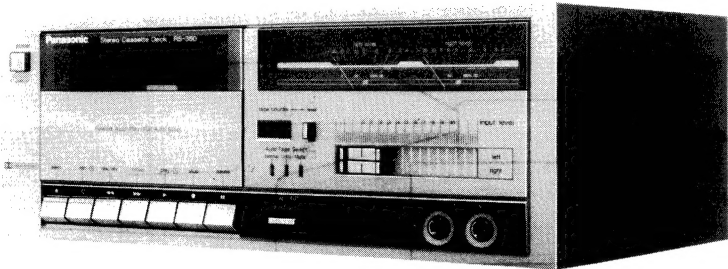


Service Manual

Cassette Deck
RS-350
(Silver Face)

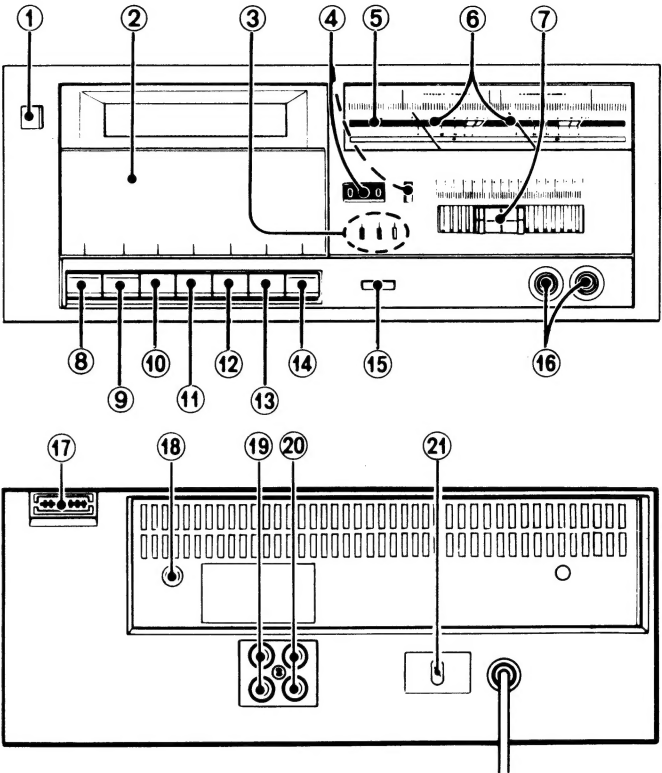


Soft-Touch Cassette Deck with Auto Tape Selector



This is the Service Manual for the following areas.
☐ For all European areas except United Kingdom.

LOCATION OF CONTROLS AND COMPONENTS



- ① Power Switch [power (push on)]
- ② Cassette Holder
- ③ Tape Indicators
- ④ Tape Counter and Reset Button [Auto Tape Select (Normal • CrO₂ • Metal)] [tape counter-reset]
- ⑤ Recording Indicators [rec]
- ⑥ VU meters [left level • right level]
- ⑦ Input Level Controls [input level (left • right)]
- ⑧ Eject Button [eject (▲)]
- ⑨ Record Button [rec • ☐ (○)]
- ⑩ Rewind/Review Button [rew/rev (◀◀)]
- ⑪ Fast Forward/Cue Button [ff/cue (▶▶)]
- ⑫ Play Button [play • ▢ (▶)]
- ⑬ Stop Button [stop (■)]
- ⑭ Pause Button [pause (⏸)]
- ⑮ Dolby Noise-Reduction Switch [Dolby NR (■ out • ▲ in)]
- ⑯ Microphone Jacks [mic (L • R) (Auto Input Select)]
- ⑰ Direct Connector
- ⑱ Stabilizing Pin
- ⑲ Line Input Jacks [LINE IN (R • L)]
- ⑳ Line Output Jacks [LINE OUT (R • L)]
- ㉑ AC Power Voltage Selector

RS-M24 MECHANISM SERIES

- RS-350 is similar model to RS-3.
- Please use this manual together with the service manual for model No. RS-3 [Original (for the ☐ mark areas “Silver Type”)] order No. ARD82120206C8-10.
- This Service Manual indicates the main differences between; RS-3 [Original (for the ☐ mark areas “Silver Type”)] and RS-350.

Specifications

Track system:	4-track 2-channel stereo recording and playback	Inputs:	MIC; sensitivity 0.25mV, applicable microphone impedance 400Ω—10kΩ
Tape speed:	4.8cm/s		LINE; sensitivity 60mV, input impedance 47kΩ or more
Wow and flutter:	0.05% (WRMS), ±0.14% (DIN)	Outputs:	LINE; output level 400mV, output impedance 2kΩ or less
Frequency response:	Metal tape; 20—17,000Hz 30—15,000 Hz (DIN)	Bias frequency:	80kHz
	CrO ₂ tape; 20—16,000Hz 30—14,000 Hz (DIN)	Heads:	2-head system 1-MX head for record/playback 1-double-gap ferrite head for erasure
	Normal tape; 20—15,000Hz 30—13,000 Hz (DIN)	Motor:	1-motor system
Signal-to-noise ratio:	Dolby [®] B NR in; 67dB (CCIR)	Power requirements:	AC; 110/125/220/240 V, 50—60 Hz
	NR out; 57dB		Preset power voltage 220 V
	(Signal level = max. input level A weighted, CrO ₂ type tape)	Power consumption:	15W
Fast forward and		Dimensions:	31.5cm(W)×12.4cm(H)×24.8cm(D)
rewind time:	Approx. 90 seconds with C-60 cassette tape	Weight:	3.2kg

Design and specifications are subject to change without notice.
* Dolby[®] and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

PARTS COMPARISON TABLE:

Please revise the original parts list in the Service Manual [RS-3 (for the ☐ mark areas “Silver Type”)] to conform to the changes shown herein.
If new part numbers are shown, be sure to use them when ordering parts.

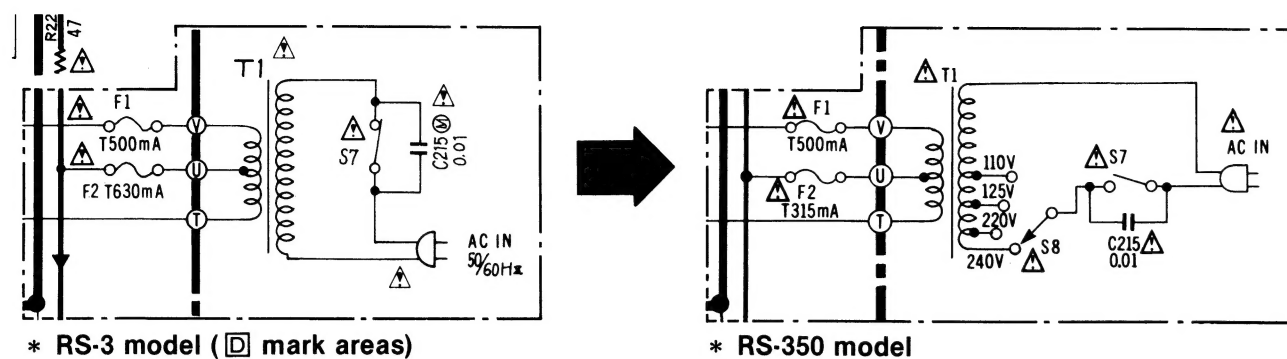
• Important safety notice
Components identified by ▲ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

Ref. No.	Part Name & Description	Part Numbers		Remarks
		RS-3 model For the ☐ mark areas “Silver Type”	RS-350 model “Silver Type”	
M86	Chassis Cover Assembly	QXH0357H	QXH0357H1	
T1 ▲	AC Power Transformer	QLPD72EKE	QLPD78EKE	
F2 ▲	Fuse	XBAQ0008 (T630mA)	XBAQ0006 (T315mA)	
S8 ▲	Rotary Switch (AC Power Voltage Selector)	—	QSR1407H	Added
G8 ▲	Terminal	SJT777	—	Deleted
G18	Level Meter	QSL2010RNM	QSL2014RNM	
G31 ▲	AC Power Cord	SJA88	RJA23YA-K	
G32	Main Case	QKMM0042S	QKMM0042H	
G37	Switch Shelter	QGKM0182	—	Deleted
G50	Washer	QBK7178	—	Deleted
G60	Cassette Lid Assembly	QYFM0065	QYFM0070	
G63	Main Name Plate	QGSM0186	QGSM0197	
G79 ▲	Nylon Coupler	—	QJT1079	Added
A2	Instruction Book	QQT3413	QQT3524	
P1	Inner Carton	QPNM0196	QPNM0205	

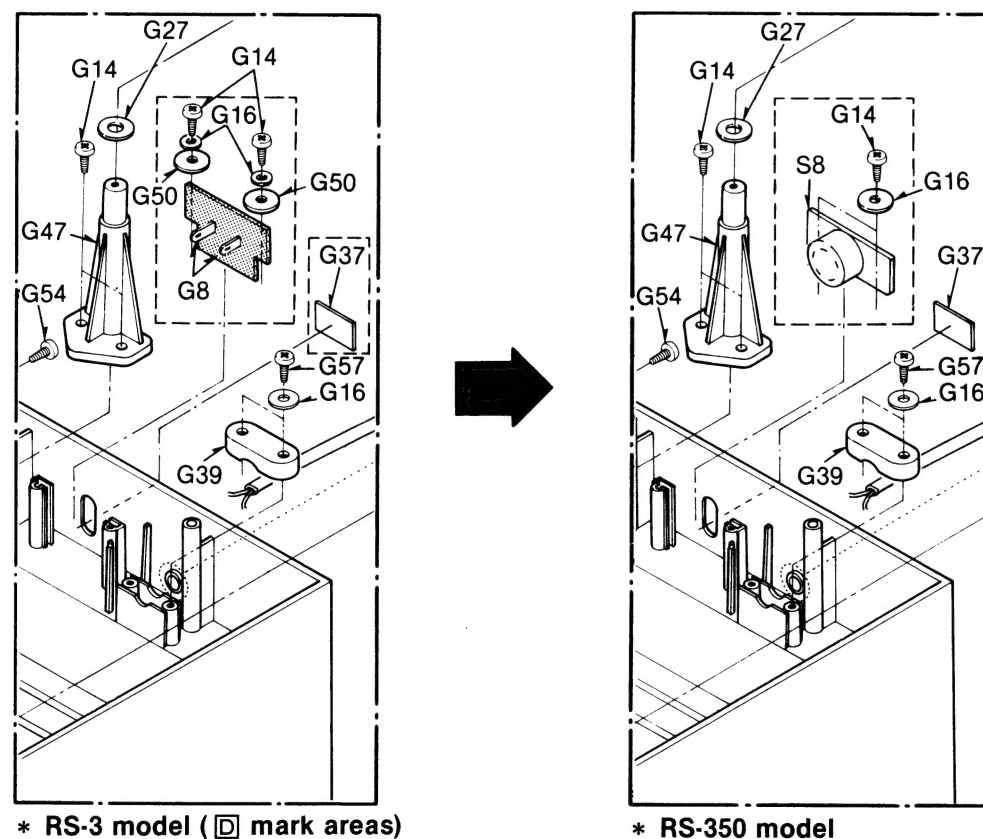
Panasonic

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

SCHEMATIC DIAGRAM (DIFFERENCE)

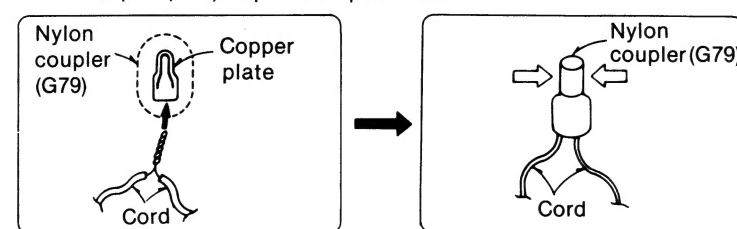


CABINET PARTS LOCATION (DIFFERENCE)

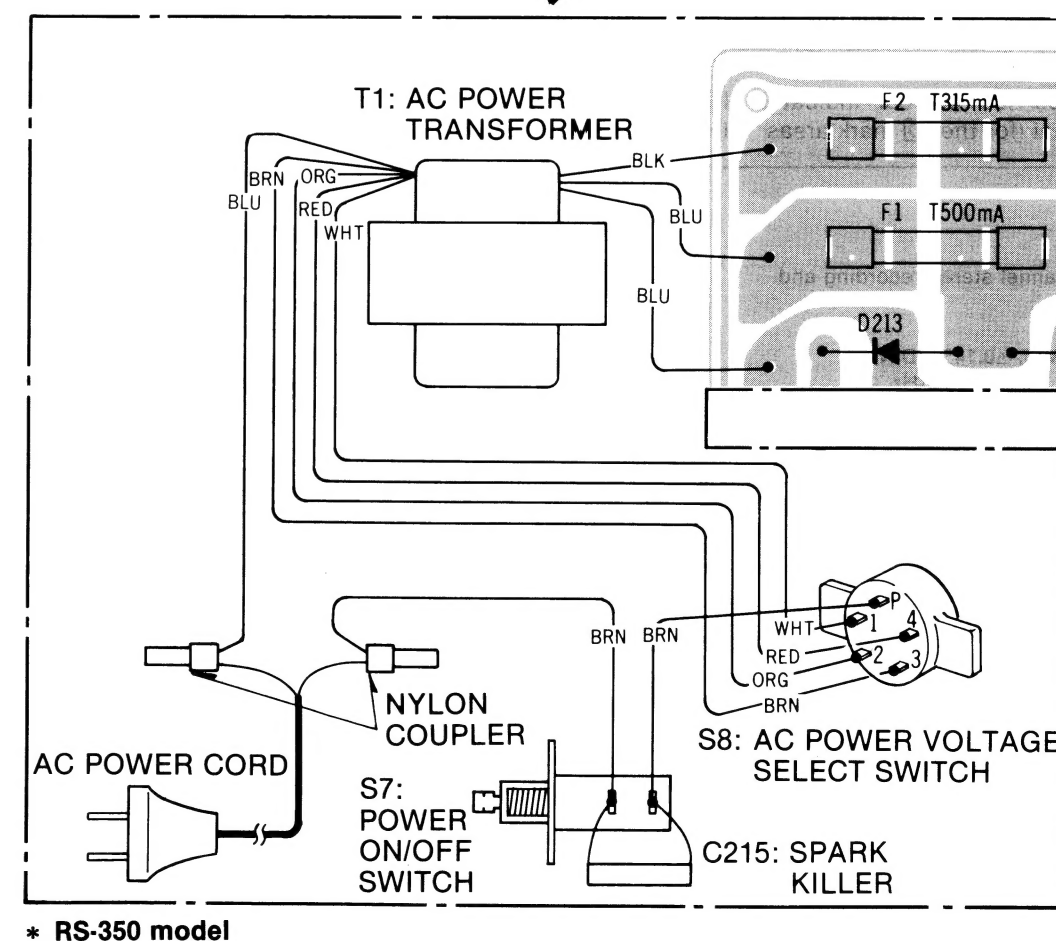
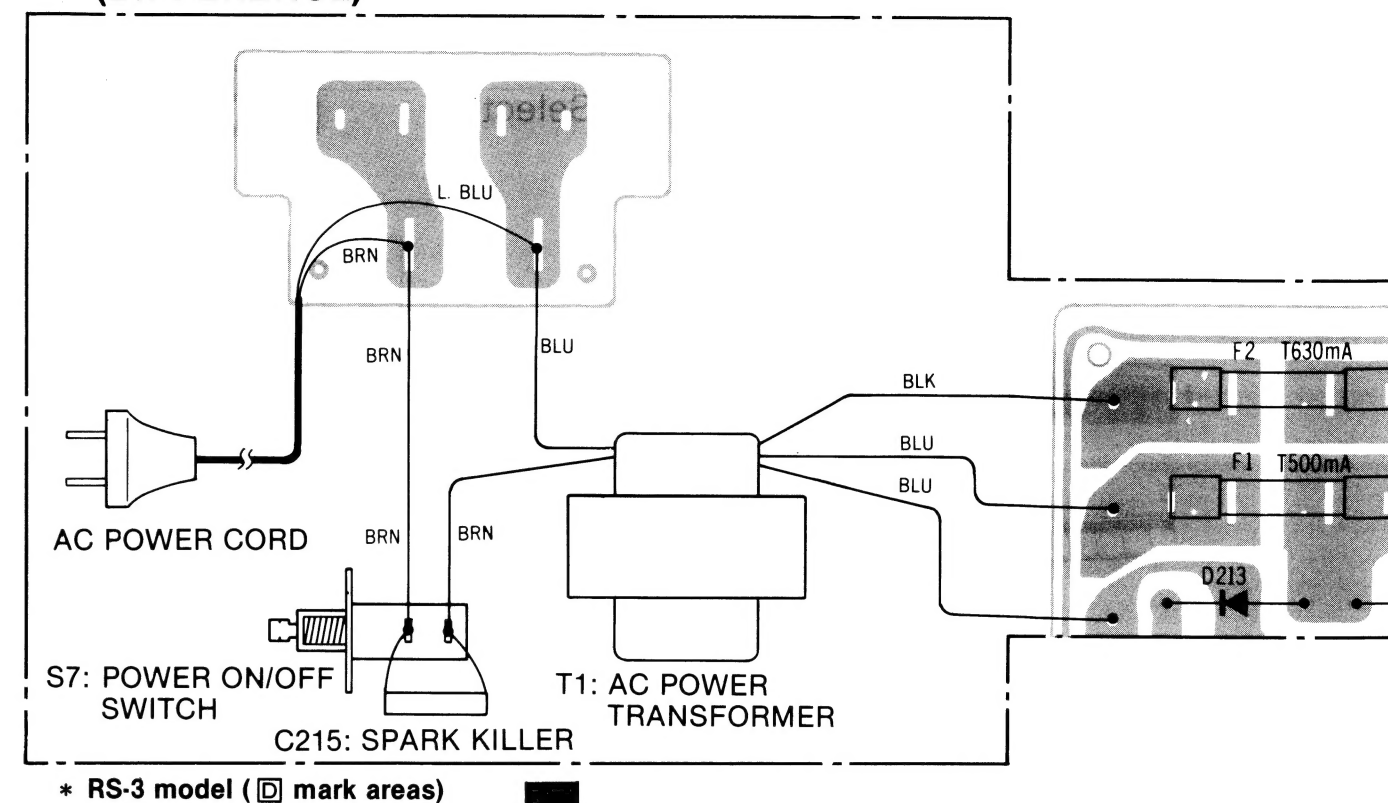


(ADDITION)

Note: Cord connection using this nylon coupler (G79) requires a special tool.



CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM (DIFFERENCE)



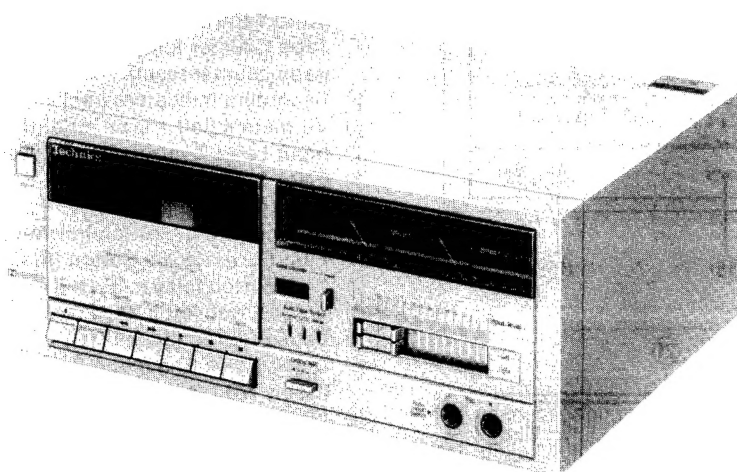
Service Manual

Cassette Deck

RS-3

(Silver Face)
(Black Face)

Soft-Touch Cassette Deck with Auto Tape Selector



This is the Service Manual for the following areas.

- ☐ For all European areas except United Kingdom.
☐ For Asia, Latin America, Middle East and Africa areas.

RS-3 in black is also available in some countries.

RS-M24 MECHANISM SERIES

Specifications

Track system:	4-track 2-channel stereo recording and playback	Inputs:	MIC; sensitivity 0.25mV, applicable microphone impedance 400Ω—10kΩ
Tape Speed:	4.8cm/s		LINE; sensitivity 60mV, input impedance 47kΩ—or more
Wow and flutter:	0.05% (WRMS), ±0.14% (DIN)	Outputs:	LINE; output level 400mV, output impedance 2kΩ or less
Frequency response:	Metal tape; 20—17,000Hz 30—15,000Hz (DIN)	Bias frequency:	80kHz
	CrO ₂ tape; 20—16,000Hz 30—14,000Hz (DIN)	Heads:	2-head system 1-MX head for record/playback 1-double-gap ferrite head for erasure
	Normal tape; 20—15,000Hz 30—13,000Hz (DIN)	Power requirements:	[D]...AC; 220V, 50—60Hz [N]...AC; 110/125/220/240V, 50—60Hz Preset power voltage 240V
Signal-to-noise ratio:	Dolby [*] B NR in; 67dB (CCIR) NR out; 57dB (Signal level = max. input level A weighted, CrO ₂ type tape)	Power consumption:	[D]...15W [N]...11W
Fast Forward and rewind time:	Approx. 90seconds with C-60 cassette tape	Dimensions:	31.5cm(W)×12.4cm(H)×24.8cm(D)
		Weight:	3.2kg

Design & Specifications are subject to change without notice.

* 'Dolby' and the double-D symbol are trademarks of Dolby Laboratories.

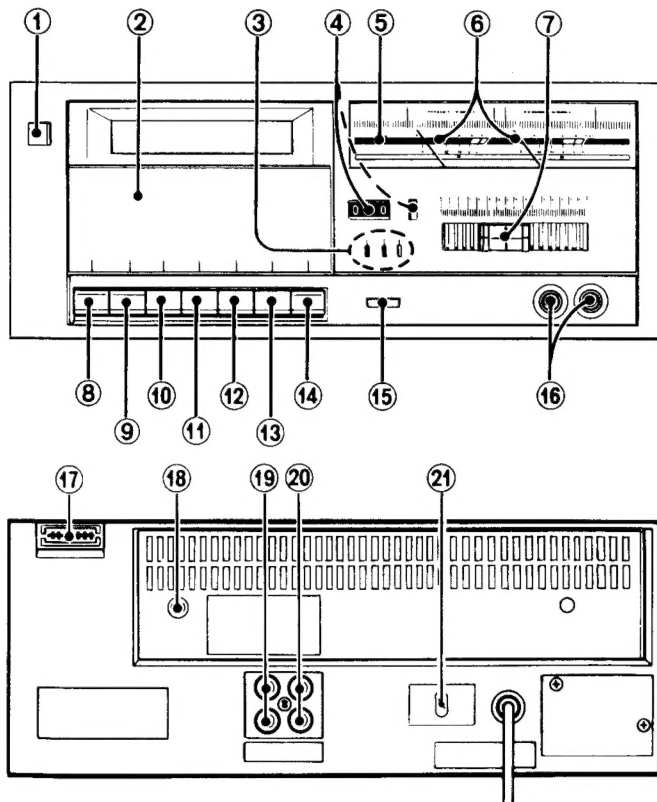
Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

CONTENTS

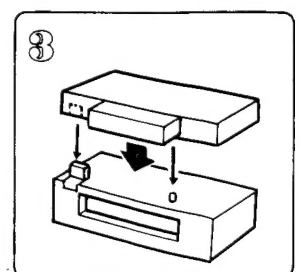
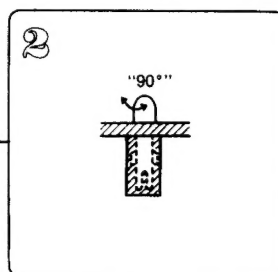
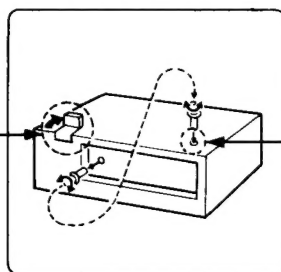
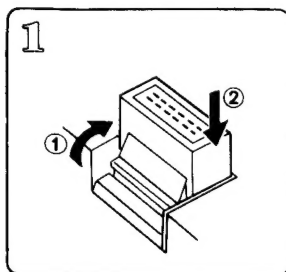
Item	Page	Item	Page
• LOCATION OF CONTROLS AND COMPONENTS.....	2	• CIRCUIT BOARD AND WIRING	
• FOR CONNECTION WITH		CONNECTION DIAGRAM	13
THE DIRECT CONNECTOR	2	• ELECTRICAL PARTS LIST	16
• DISASSEMBLY INSTRUCTIONS.....	3	• MECHANICAL PARTS LOCATION	
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LOCATION OF CONTROLS AND COMPONENTS



- ① Power Switch [power (push on)]
 - ② Cassette Holder
 - ③ Tape Indicators
[Auto Tape Select (Normal • CrO₂ • Metal)]
 - ④ Tape Counter and Reset Button
[tape counter-reset]
 - ⑤ Recording Indicators [rec]
 - ⑥ VU meters [left • level • right]
 - ⑦ Input Level Controls [input level (left • right)]
 - ⑧ Eject Button [eject (▲)]
 - ⑨ Record Button [rec • □ (○)]
 - ⑩ Rewind/Review Button [rew/rev (◀◀)]
 - ⑪ Fast Forward/Cue Button [ff/cue (▶▶)]
 - ⑫ Play Button [play • □ (▶)]
 - ⑬ Stop Button [stop (■)]
 - ⑭ Pause Button [pause (⏸)]
 - ⑮ Dolby Noise-Reduction Switch
[Dolby NR (■ out • ▲ in)]
 - ⑯ Microphone Jacks [mic (L • R) (Auto Input Select)]
 - ⑰ Direct Connector
 - ⑱ Stabilizing Pin
 - ⑲ Line Input Jacks [LINE IN (R • L)]
 - ⑳ Line Output Jacks [LINE OUT (R • L)]
 - ㉑ AC Power Voltage Selector
- * For Asia, Latin America, Middle East and Africa areas.

FOR CONNECTION WITH THE DIRECT CONNECTOR



Connections should be made in accordance with the connection diagram and the following instructions: When 2 microphones are used in order to record in stereophonic sound, be sure both of them have the same performance and specification standards.

1. For connection with the direct connector:

- Connection can be made without using the stereo pin cords when the unit and TECHNICS' SU-3 Stereo Amplifier and ST-3 FM/AM tuner are stacked up for use.
- Set the direct connector to the erect position, replace the fixing pin at the unit's rear panel on the unit's top and connect the stereo amplifier properly (the fixing pin can be removed by rotating it 90°).

Notes:

- The stereo pin cords must be detached when connection is made using the direct connector.
- Do not shake or twist the components since they will unnecessarily strain the direct connector and fixing pin and may damage them in the process.

2. For connection with the stereo pin cords

- Connection is made with the stereo pin cords when this unit is used in combination with the SU-3 stereo amplifier, ST-3 FM/AM tuner or other components.

Notes:

- Do not set the direct connector to the erect position.
- Secure the fixing pin to the unit's rear panel.

3. Location of this unit and stereo amplifier

If this unit is placed on top or next to the stereo amplifier, a "hum" noise may be heard during tape playback. Refer to the information below in order to avoid this.

- If the stereo amplifier and this unit are placed one above the other, leave as much space as possible between them, and place them where there is the least amount of hum.

- If the stereo amplifier and this unit are placed one beside the other, try reversing their positions, and place them where there is the least amount of hum.

A "click" noise may be heard when the Power Switch is turned on or off. To avoid this, be sure to set the volume control of the amplifier to the minimum position.

DISASSEMBLY INSTRUCTIONS

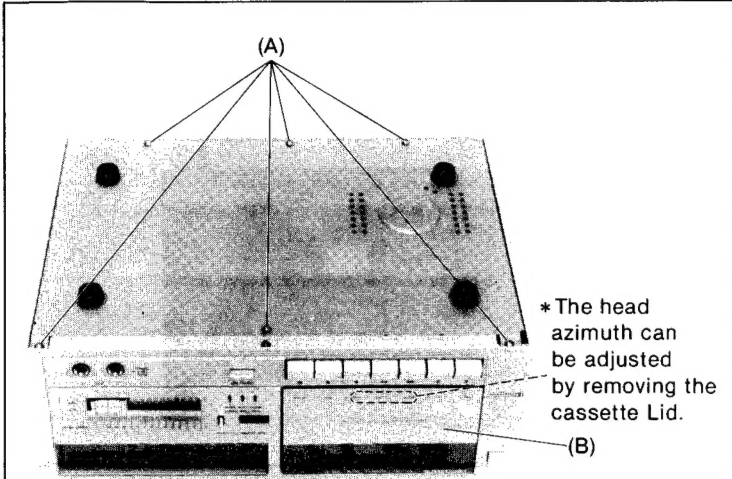


Fig. 1

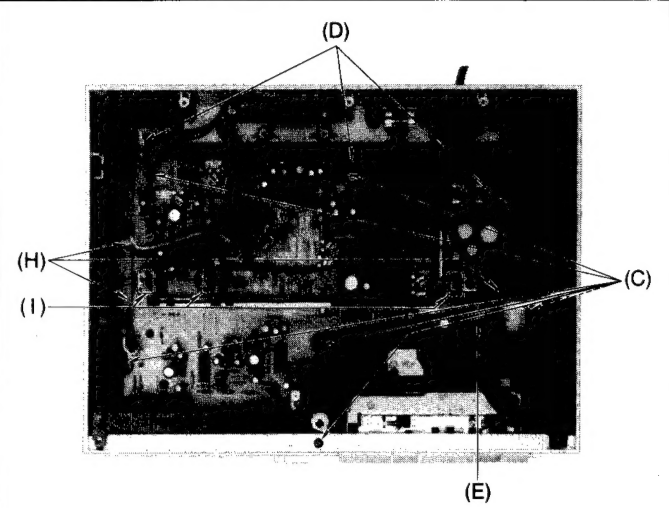


Fig. 2

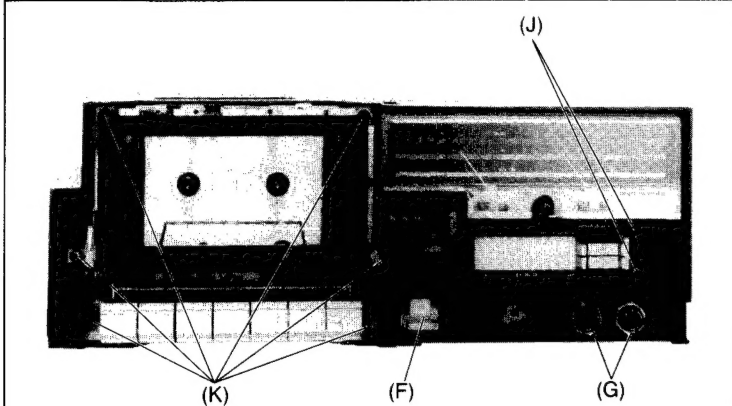


Fig. 3

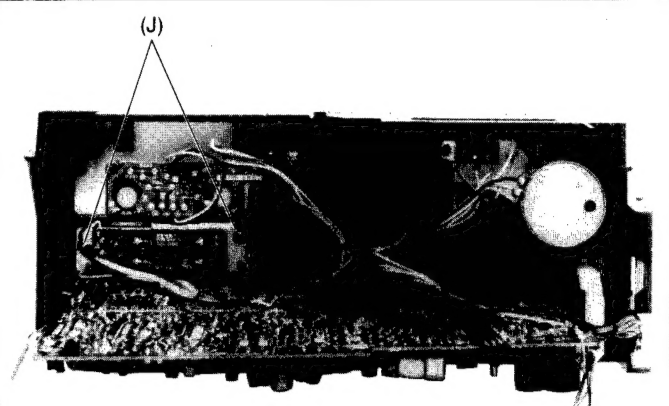


Fig. 4

Ref. No.	Procedure	To remove—.	Remove—.	Shown in fig.—.
1	1	Bottom cover	• 6 screws (A)	1
2	1 → 2	Main circuit board and mechanism unit	• Cassette lid (B) • 6 screws (C) • Cord clammer (D)	1 2 2
3	1 → 2 → 3	Main circuit board	• 1 screw (E) • Dolby NR switch button (F) • 2 nuts (G) • Cord clammer (H) • 3 connectors..... (I)	2 3 3 2 2
4	1 → 2 → 4	Input level control circuit board	• 4 screw (J)	3, 4
5	1 → 2 → 5	Mechanism unit	• 6 screws (K)	3

ASSEMBLY NOTES:**Precautions for mounting the input level control knob assembly**

- Move the input level control lever and the input level control knob assembly to the right. Check that they engage each other as shown in fig. 6 and install the slide guide.

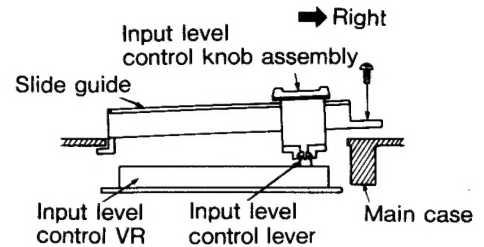
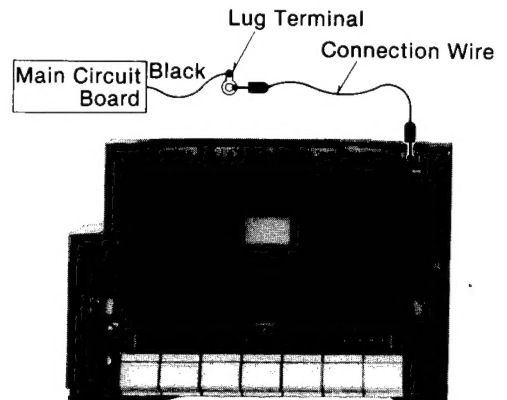


Fig. 6

MECHANISM SECTION

1. For repair, measurement or adjustment with the mechanism removed from the unit be sure to ground the lower base plate of the mechanism.
2. For grounding, connect a extension cord to the mechanism's lower base plate and the lug terminal from amplifier printed circuit board.
3. Without grounding, the amplifier does not operate properly.

**MEASUREMENT AND ADJUSTMENT METHODS****NOTE:**

Tape speed can be adjusted through the small hole on the backside of main case by the \ominus screw driver (non metal type) as shown in fig. 1.

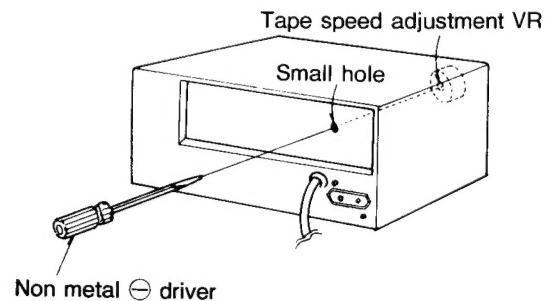


Fig. 1

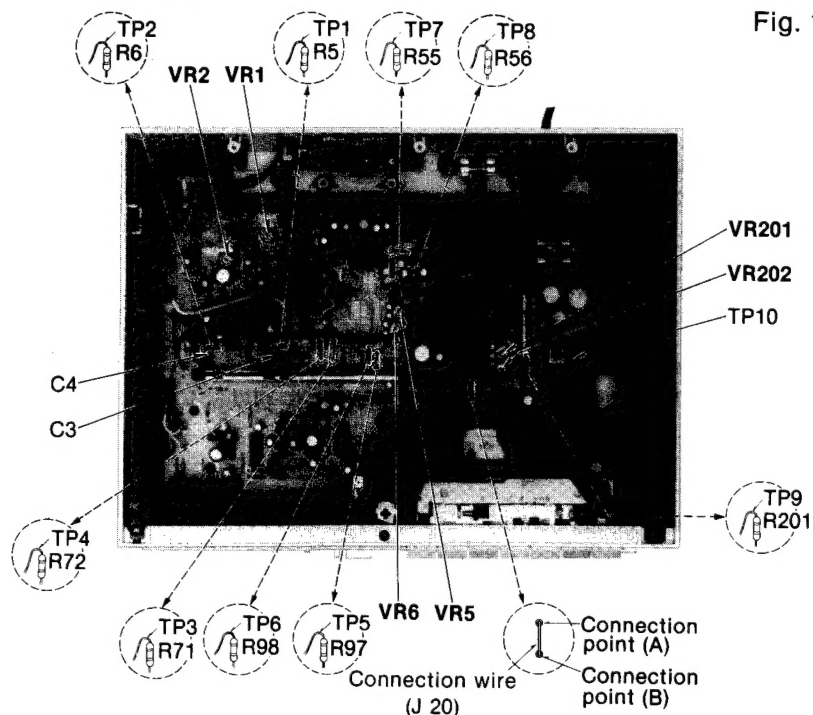
ADJUSTMENT PARTS LOCATION

Fig. 2

NOTES: Set switches and controls in the following positions, unless otherwise specified.

- Make sure heads are clean
- Make sure capstan and pressure roller are clean
- Judgeable room temperature $20 \pm 5^\circ\text{C}$ ($68 \pm 9^\circ\text{F}$)
- Input level controls: Maximum
- NR switch: OUT

A Head position adjustment

Condition:
• Playback and pause mode

(The head adjusting plate is provided to adjust the tape touch of the head in cue or review mode.)

1. Press the playback button and pause button.
2. Measure the space between the pressure roller and the capstan.

Standard value: $0.5 \pm 0.3\text{mm}$

3. If the measured value is not within the standard value, untighten screw (A) and slide the head adjusting plate in the direction of arrow (B) for adjustment.

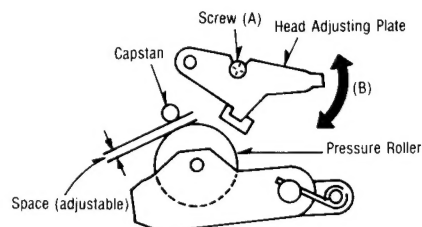


Fig. 3

B Head azimuth adjustment

Condition:
• Playback mode
• Normal tape mode

Equipment:
• VTVM
• Oscilloscope
• Test tape (azimuth)...QZZCFM

L-CH/R-CH output balance adjustment

1. Make connections as shown in fig. 4.

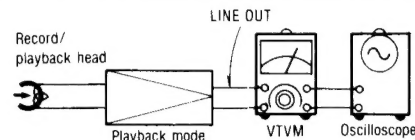


Fig. 4

2. Playback the 8kHz signal from the test tape (QZZCFM). Adjust screw (B) in fig. 5 for maximum output L-CH and R-CH levels. When the output levels of L-CH and R-CH are not at maximum at the same point adjust as follows.
3. Turn screw (B) shown in fig. 5 to find angles A and C (points where peak output levels for left and right channels are obtained). Then, locate angle B between angles A and C, i.e., point where L-CH and R-CH outputs are balanced. (Refer to figs. 5 and 6.)

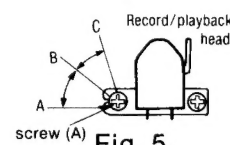


Fig. 5

L-CH/R-CH phase adjustment

4. Make connections as shown in fig. 7.
5. Playback the 8kHz signal from the test tape (QZZCFM). Adjust screw (B) shown in fig. 5 so that pointers of the two VTVMs swing to maximum and a lissajous waveform as illustrated in fig. 8 is obtained on the oscilloscope.

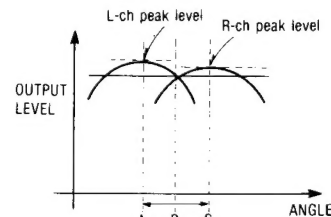


Fig. 6

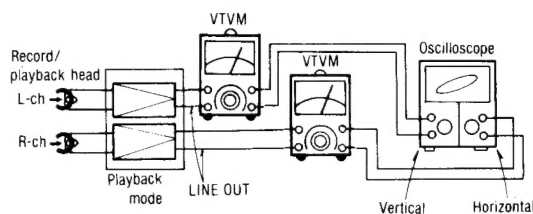


Fig. 7

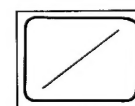


Fig. 8

C Tape speed

Condition:
• Playback mode

Equipment:
• Digital frequency counter
• Test tape...QZZCWAT

Tape speed accuracy

1. Test equipment connection is shown in fig. 9.
2. Playback test tape (QZZCWAT 3,000Hz), and supply playback signal to the digital frequency counter.
3. Measure this frequency.
4. On the basis of 3,000Hz, determine value by following formula:

$$\text{Tape speed accuracy} = \frac{f - 3,000}{3,000} \times 100(\%) \quad \text{where, } f = \text{measured value}$$

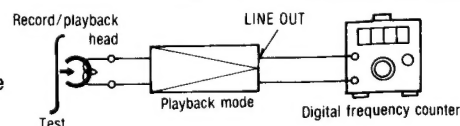


Fig. 9

5. Take measurement at middle section of tape.

Standard value: $\pm 1.5\%$

6. If measured value is not within the standard value, adjust it by using the tape speed adjustment VR shown in Fig. 1.
Note: Please use non metal type screwdriver when you adjust tape speed accuracy on this unit.

Tape speed fluctuation

Make measurements in same manner as above (beginning, middle and end of tape), and determine the difference between maximum and minimum values and calculate as follows:

$$\text{Tape speed fluctuation} = \frac{f_1 - f_2}{3,000} \times 100(\%) \quad f_1 = \text{maximum value}, f_2 = \text{minimum value}$$

Standard value: Less than 1%

④ Playback frequency response

Condition:
 • Playback mode
 • Normal tape mode

Equipment:
 • VTVM
 • Oscilloscope
 • Test tape...QZZCFM

1. Test equipment connection is shown in fig. 4.
2. Playback the frequency response portion of test tape (QZZCFM).
3. Measure output level at 315Hz, 12.5kHz, 8kHz, 4kHz, 1kHz, 250Hz, 125Hz and 63Hz, and compare each output level with the standard frequency 315Hz, at LINE OUT.
4. Make measurements for both channels.
5. Make sure that the measured values are within the range specified in the frequency response chart. (Shown in fig. 10).

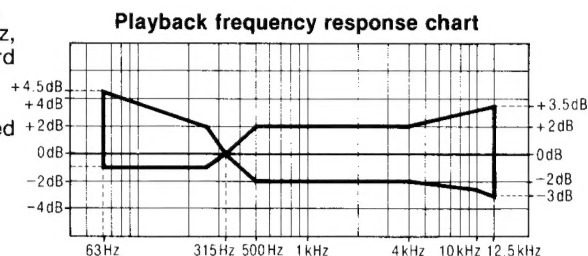


Fig. 10

⑤ Playback gain

Condition:
 • Playback mode
 • Normal tape mode

Equipment:
 • VTVM
 • Oscilloscope
 • Test tape...QZZCFM

1. Test equipment connection is shown in fig. 4.
2. Playback standard recording level portion on test tape (QZZCFM 315Hz) and, using VTVM, measure the output level at test points [TP3 (L-CH), TP4 (R-CH)].
3. Make measurements for both channels.

Standard value: 0.42V [0.4V \pm 2dB: at LINE OUT jack]

Adjustment

1. If the measured value is not within the standard adjust VR1 (L-CH) or VR2 (R-CH) (See fig 2).
2. After adjustment, check "Playback frequency response" again.

⑥ Erase current

Condition:
 • Record mode
 • Metal tape mode

Equipment:
 • VTVM
 • Oscilloscope

1. Test equipment connection is shown in fig. 11.
2. Place UNIT into metal tape mode.
3. Press the record and pause buttons.
4. Read voltage on VTVM and calculate erase current by following formula:

$$\text{Erase current (A)} = \frac{\text{Voltage across resistor R201}}{1 (\Omega)}$$

Standard value: 115 \pm 15mA (Metal)

5. If the measured value is not within the standard value adjust it by following the adjustment instructions.

Adjustment

1. If the erase current is less than 140mA, short the point (A) and (B).
2. If the erase current is more than 170mA, open the points (A) and (B).
 (Shown in Fig. 2.)

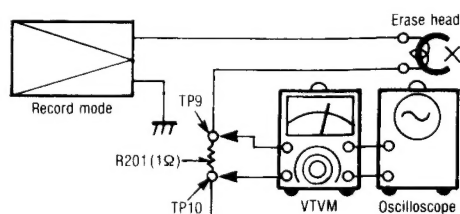


Fig. 11

Overall frequency response

Condition:

- Record/playback mode
- Normal tape mode
- CrO₂ tape mode
- Metal tape mode
- Input level controls...MAX

Equipment:

- VTVM
- ATT
- AF oscillator
- Oscilloscope
- Resistor (600Ω)
- Test tape (reference blank tape)
- ...QZZCRA for Normal
- ...QZZCRX for CrO₂
- ...QZZCRZ for Metal

Note:

Before measuring and adjusting, the overall frequency response make sure of the playback frequency response (For the method of measurement, please refer to the playback frequency response).

(Recording equalizer is fixed)

1. Make connections as shown in fig. 13.
2. Place UNIT into normal tape mode and insert the normal reference blank test tape (QZZCRA).
3. Supply a 1kHz signal from the AF oscillator through ATT to LINE IN.
4. Adjust ATT so that input level is -20dB below standard recording level (standard recording level = 0 VU).
5. Adjust the AF oscillator frequency to 1kHz, 50Hz, 100Hz, 200Hz, 500Hz, 4kHz, 8kHz, 10kHz and 12kHz signals, and record these signals on the test tape.
6. Playback the signals recorded in step 6, and check if the frequency response curve is within the limits shown in the overall frequency response chart for normal tapes (fig. 12). (If the curve is within the charted specifications, proceed to steps 7, 8 and 9.)
- If the curve is not within the charted specifications, adjust as follows;

Overall frequency response chart (Normal)

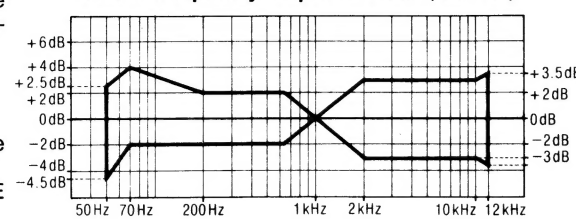


Fig. 12

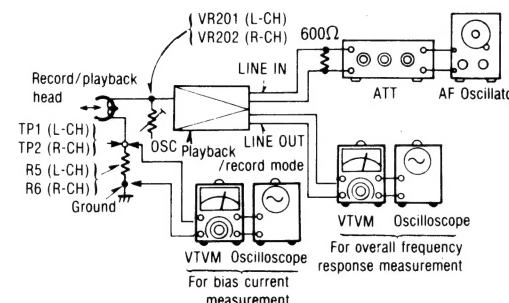


Fig. 13

Adjustment (A):

When the curve exceeds the overall specified frequency response chart (fig. 12) as shown in fig. 14.

- 1) Increase bias current by turning VR201 (L-CH) and VR202 (R-CH). (See fig. 2 on page 4.)
- 2) Repeat steps 5 and 6 for confirmation (Proceed to steps 7, 8 and 9 if the curve is now within the charted specifications as shown fig. 12.)
- 3) If the curve still exceeds the specifications (fig. 12), increase bias current further and repeat steps 5 and 6.

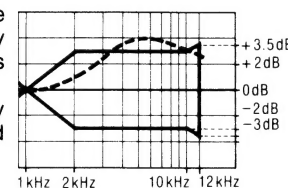


Fig. 14

Adjustment (B):

When the curve falls below the overall specified frequency response chart (fig. 12) as shown in fig. 15.

- 1) Reduce bias current by turning VR201 (L-CH) and VR202 (R-CH).
- 2) Repeat steps 5 and 6 for confirmation (Proceed to steps 7, 8 and 9 if the curve is now within the charted specifications as shown fig. 12.)
- 3) If the curve still falls below the charted specifications (fig. 12), reduce bias current further and repeat steps 5 and 6.

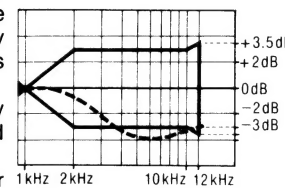


Fig. 15

Overall frequency response chart (CrO₂, Metal)

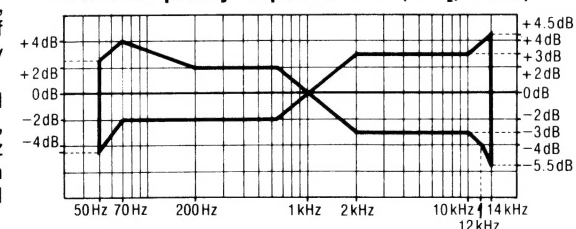


Fig. 16

7. Place UNIT into CrO₂ tape mode.
8. Change test tape to CrO₂ reference blank test tape (QZZCRX), and record 1kHz, 50Hz, 100Hz, 200Hz, 500Hz, 4kHz, 8kHz, 10kHz, 12kHz and 14kHz signals. Then, playback the signals and check if the curve is within the limits shown in the overall frequency response chart or CrO₂ tapes (fig. 16).
9. Place UNIT into metal tape mode and change test tape to metal reference blank test tape (QZZCRZ), and record 1kHz, 50Hz, 100Hz, 200Hz, 500Hz, 4kHz, 8kHz, 10kHz, 12kHz and 14kHz signals. Then, playback the signals and check if the curve is within the limits shown in the overall frequency response chart for metal tapes (fig. 16).
10. Confirm that bias currents are approximately as follows when the UNIT is set at different tape mode.

- Read voltage on VTVM between ground and test point (TP1 for L-CH, TP2 for R-CH) and calculate bias current by following formula:

$$\text{Bias current (A)} = \frac{\text{Value read on VTVM (V)}}{10 (\Omega)}$$

around 380μA (Normal position)
Standard value: around 480μA (CrO₂ position)
around 780μA (Metal position)

Overall gain

Condition:

- Record/playback mode
- Normal tape mode
- Input level controls...MAX
- Standard input level;
MIC -72±3.5dB
LINE IN -24±3.5dB

Equipment:

- VTVM
- ATT
- Resistor (600Ω)
- Test tape (reference blank tape)
- ...QZZCRA for Normal
- AF oscillator
- Oscilloscope

1. Test equipment connection is shown in fig. 17.
2. Insert the normal reference blank tape (QZZCRA).
3. Place UNIT into record mode.
4. Supply a 1kHz signal through ATT (-24dB) from AF oscillator, to LINE IN.
5. Adjust ATT until monitor level at test points [TP3 (L-CH), TP4 (R-CH)] becomes 0.42V [0.4V at test LINE OUT jack].
6. Playback recorded tape, and make sure that the output level at test points [TP3 (L-CH), TP4 (R-CH)] becomes 0.42V [0.4V at test LINE OUT jack].
7. If measured value is not 0.42V, adjust it by using VR5 (L-CH) or VR6 (R-CH).
8. Repeat from step (2).

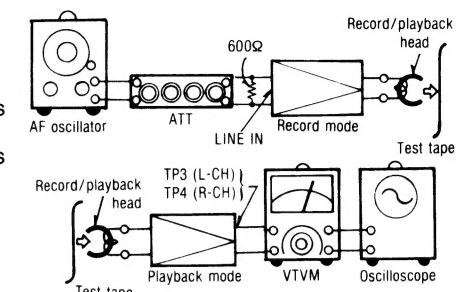


Fig. 17

Level meter

Condition:

- Record mode
- Input level controls...MAX

Equipment:

- VTVM
- ATT
- Resistor (600Ω)
- AF oscillator
- Oscilloscope

1. Test equipment connection is shown in fig. 18.
2. Supply a 1kHz signal through ATT (-24dB) to the LINE IN then place the UNIT into the record mode.
3. Adjust the ATT so that the output level at test points [TP5 (L-CH), TP6 (R-CH)] becomes 0.42V (The input level at this condition is called the standard input level).
4. At this time, confirm that the level meter indication is within a range of -1dB to +1dB (shown in fig. 19) (Confirm this for both L and R channels.)

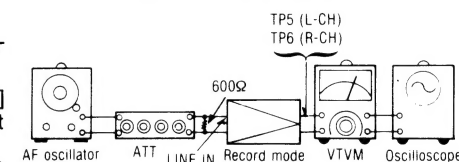


Fig. 18

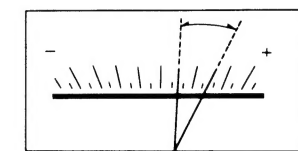


Fig. 19

Dolby NR circuit

Condition:

- Record mode
- Input level controls...MAX

Equipment:

- VTVM
- ATT
- Resistor (600Ω)
- AF oscillator
- Oscilloscope

1. Test equipment connection is shown in fig. 20.
2. Place UNIT into record mode, set the Dolby NR switch to OUT position and supply a 5kHz signal to LINE IN to obtain -34.5dB at TP5 (L-CH), TP6 (R-CH).
3. Confirm that the values at test points TP5, TP6 with Dolby NR switch in the IN position are 8 (±2.5)dB greater than the values at the OUT position of the Dolby NR switch.

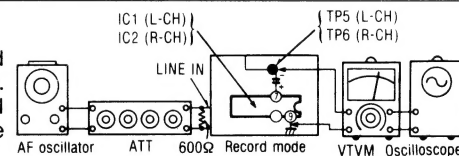


Fig. 20

RECORD

LINE IN Rch

JA2 MIC IN Rch

RECORD/PLAYBACK HEAD

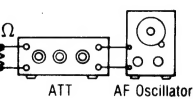
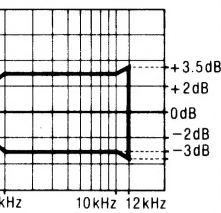
ERASE HEAD

PLAYBACK

RECORD/PLAYBACK HEAD

ape
nce blank tape)
ZZCRA for Normal
ZZCRX for CrO₂
ZZCRZ for Metal

chart (Normal)



VTVM Oscilloscope
For overall frequency
response measurement

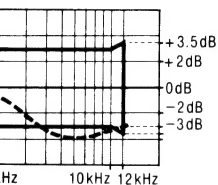
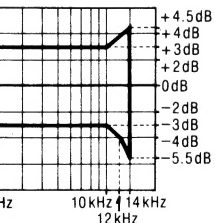


Fig. 15

arted specifications
r and repeat steps

chart (CrO₂, Metal)



Overall gain

Condition:

- Record/playback mode
- Normal tape mode
- Input level controls...MAX
- Standard input level;
MIC -72±3.5dB
LINE IN -24±3.5dB

Equipment:

- VTVM
- ATT
- Resistor (600Ω)
- Test tape
- AF oscillator
- Oscilloscope
- (reference blank tape)
...QZZCRA for Normal

- Test equipment connection is shown in fig. 17.
- Insert the normal reference blank tape (QZZCRA).
- Place UNIT into record mode.
- Supply a 1kHz signal through ATT (-24dB) from AF oscillator, to LINE IN.
- Adjust ATT until monitor level at test points [TP3 (L-CH), TP4 (R-CH)] becomes 0.42V [0.4V at test LINE OUT jack].
- Playback recorded tape, and make sure that the output level at test points [TP3 (L-CH), TP4 (R-CH)] becomes 0.42V [0.4V at test LINE OUT jack].
- If measured value is not 0.42V, adjust it by using VR5 (L-CH) or VR6 (R-CH).
- Repeat from step (2).

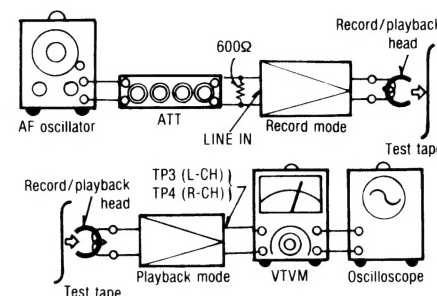


Fig. 17

Level meter

Condition:

- Record mode
- Input level controls...MAX

Equipment:

- VTVM
- ATT
- Resistor (600Ω)
- AF oscillator
- Oscilloscope

- Test equipment connection is shown in fig. 18.
- Supply a 1kHz signal through ATT (-24dB) to the LINE IN then place the UNIT into the record mode.
- Adjust the ATT so that the output level at test points [TP5 (L-CH), TP6 (R-CH)] becomes 0.42V (The input level at this condition is called the standard input level).
- At this time, confirm that the level meter indication is within a range of -1dB to +1dB (shown in fig. 19) (Confirm this for both L and R channels.)

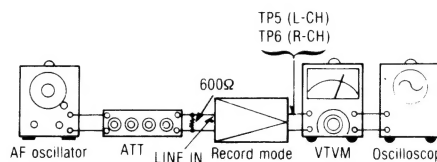


Fig. 18

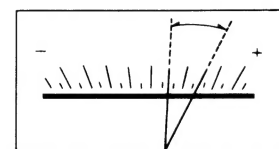


Fig. 19

Dolby NR circuit

Condition:

- Record mode
- Input level controls...MAX

Equipment:

- VTVM
- ATT
- Resistor (600Ω)
- AF oscillator
- Oscilloscope

- Test equipment connection is shown in fig. 20.
- Place UNIT into record mode, set the Dolby NR switch to OUT position and supply a 5kHz signal to LINE IN to obtain -34.5dB at TP5 (L-CH), TP6 (R-CH).
- Confirm that the values at test points TP5, TP6 with Dolby NR switch in the IN position are 8 (±2.5)dB greater than the values at the OUT position of the Dolby NR switch.

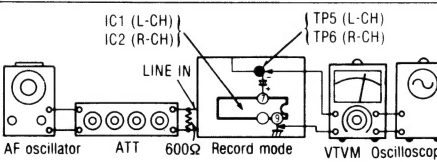
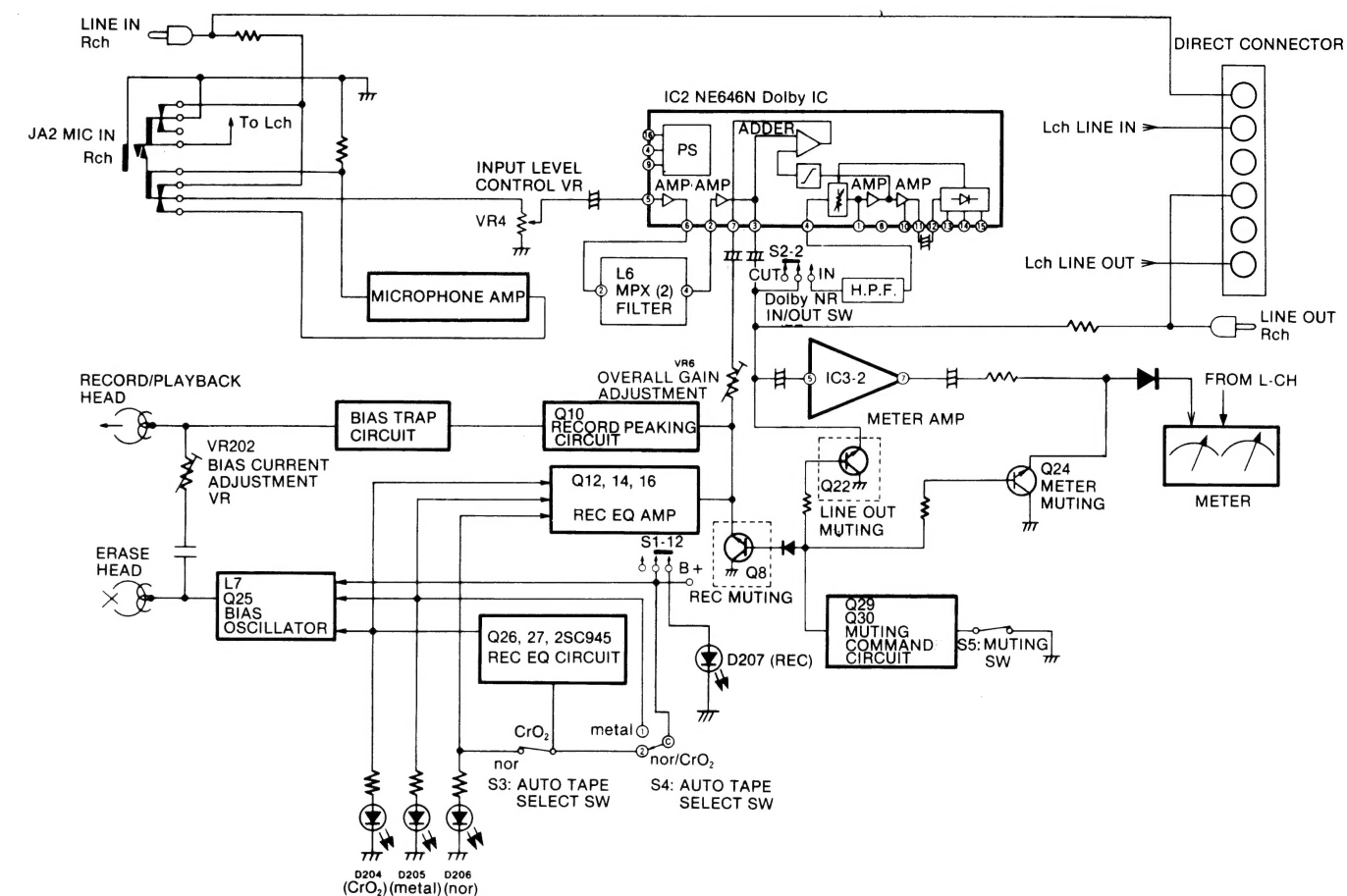


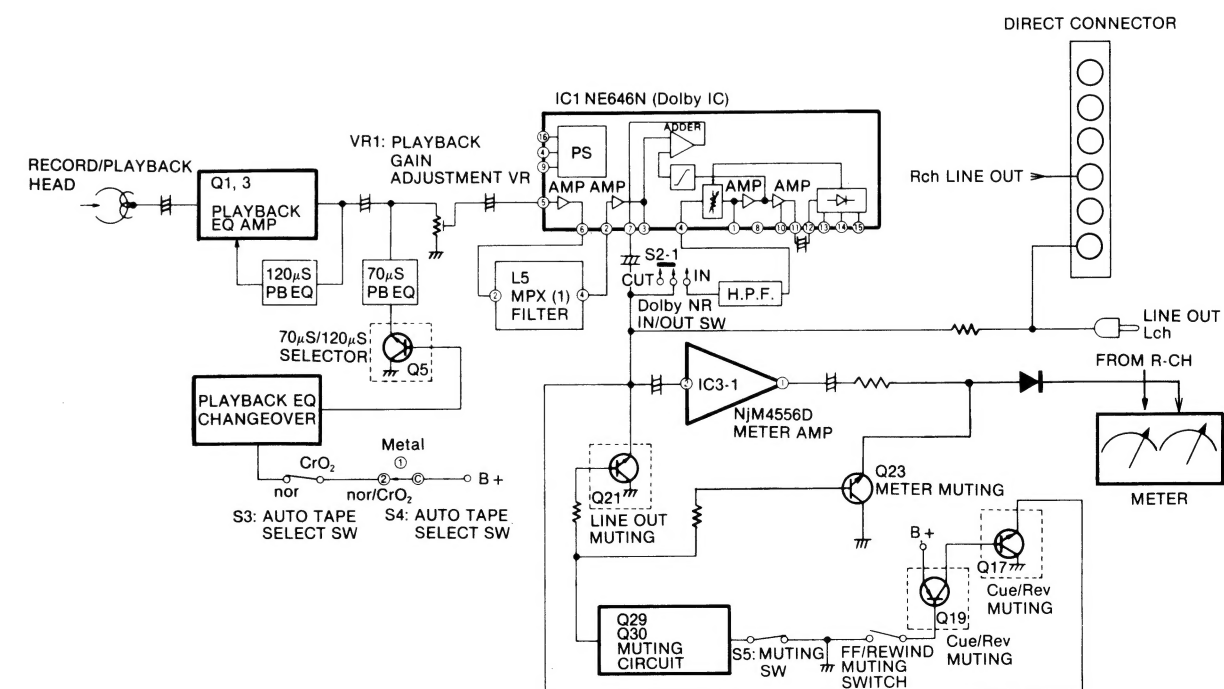
Fig. 20

BLOCK DIAGRAM

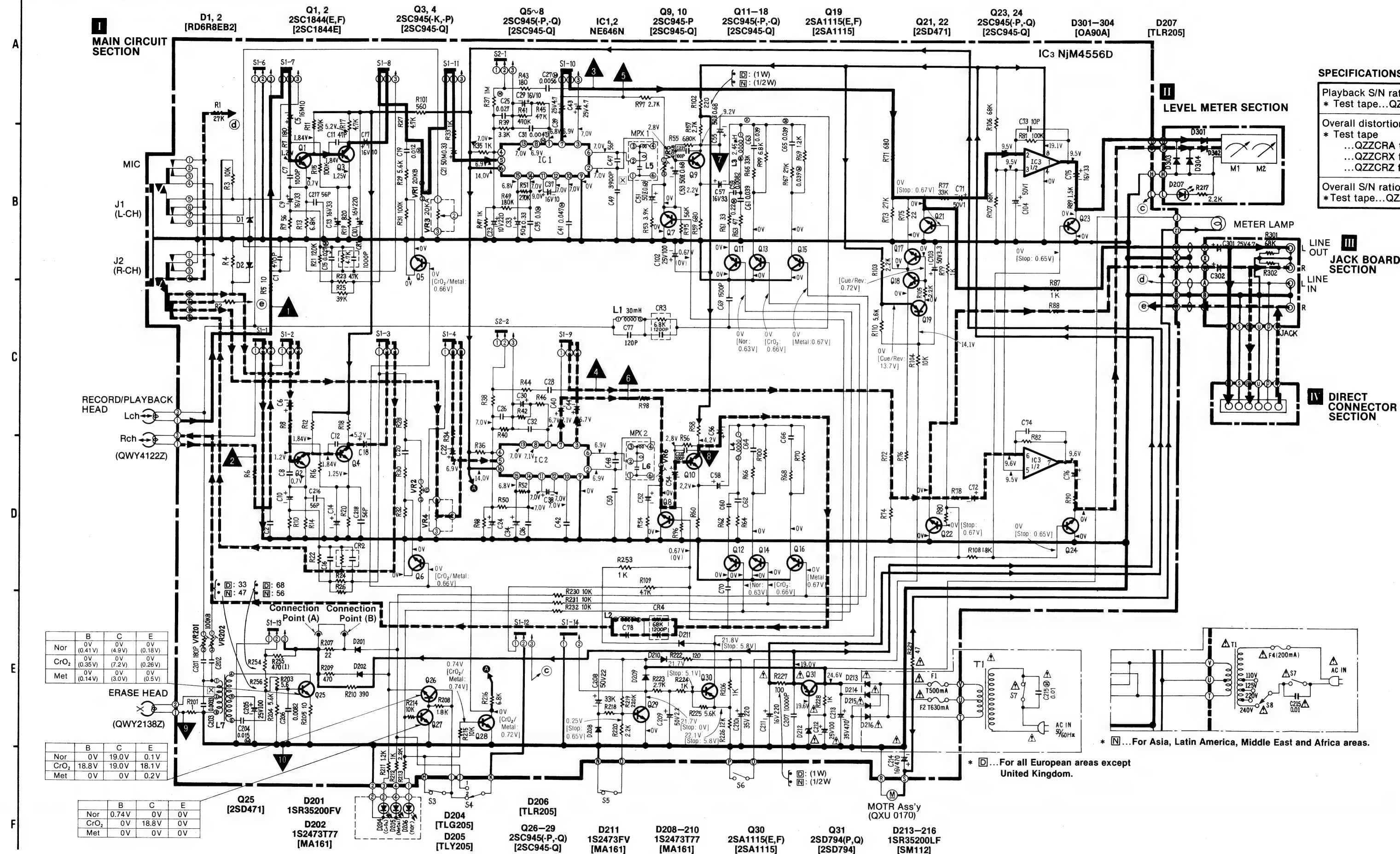
RECORD SYSTEM (R-CH ONLY)

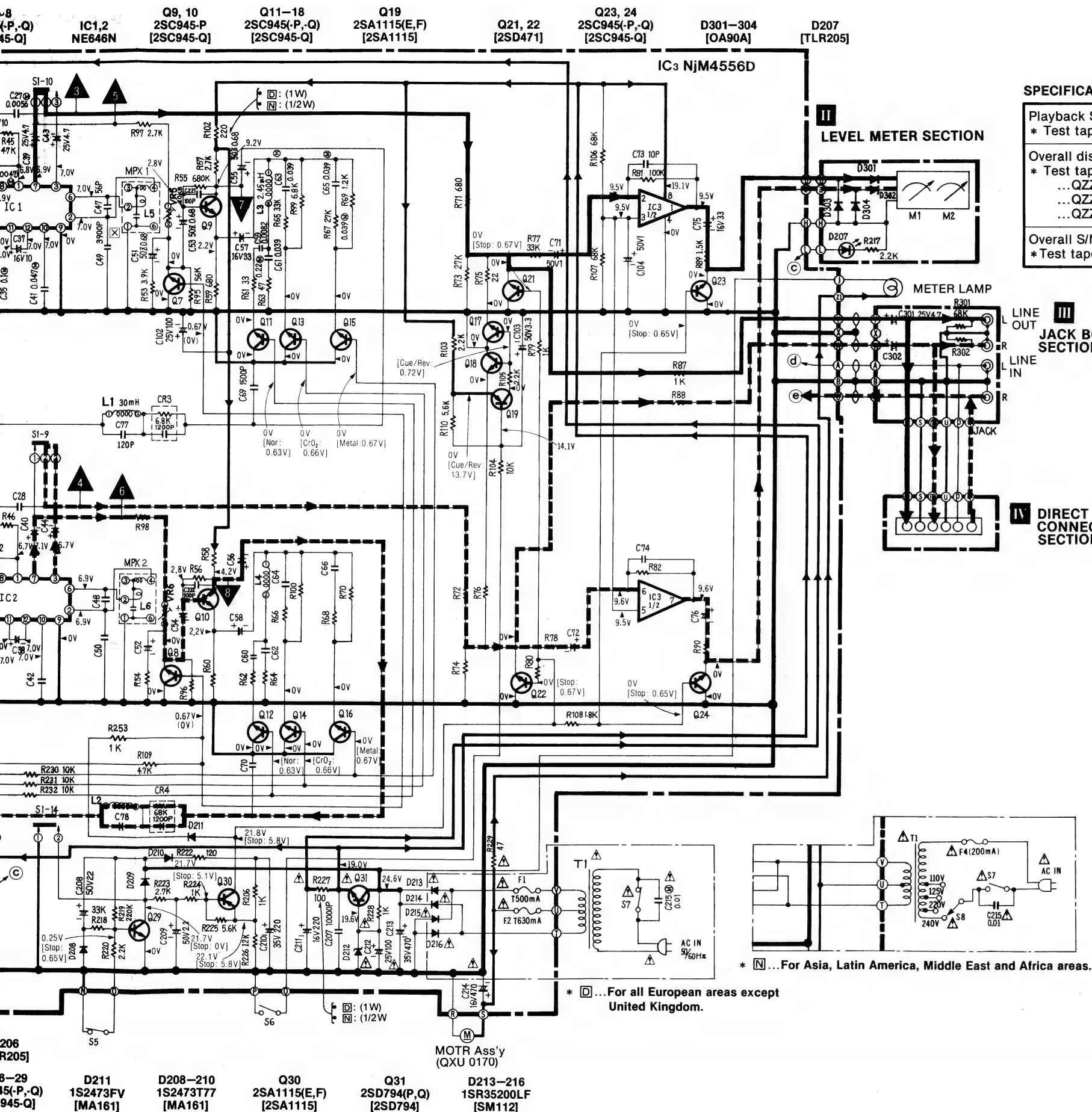


PLAYBACK SYSTEM (L-CH ONLY)



SCHEMATIC DIAGRAM





SPECIFICATIONS * Input level controls...MAX

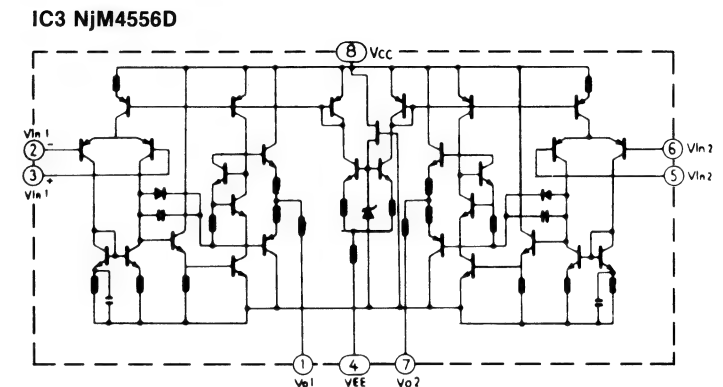
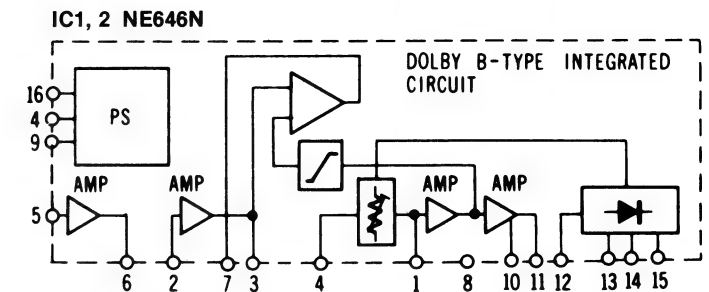
Playback S/N ratio * Test tape...QZZCFM	More than 45dB (without NAB filter)
Overall distortion * Test tape ...QZZCRA for Normal ...QZZCRX for CrO ₂ ...QZZCRZ for Metal	Less than 3% (Normal) Less than 3.5% (CrO ₂ , Metal)
Overall S/N ratio * Test tape...QZZCRA	More than 45dB (without NAB filter)

NOTES:

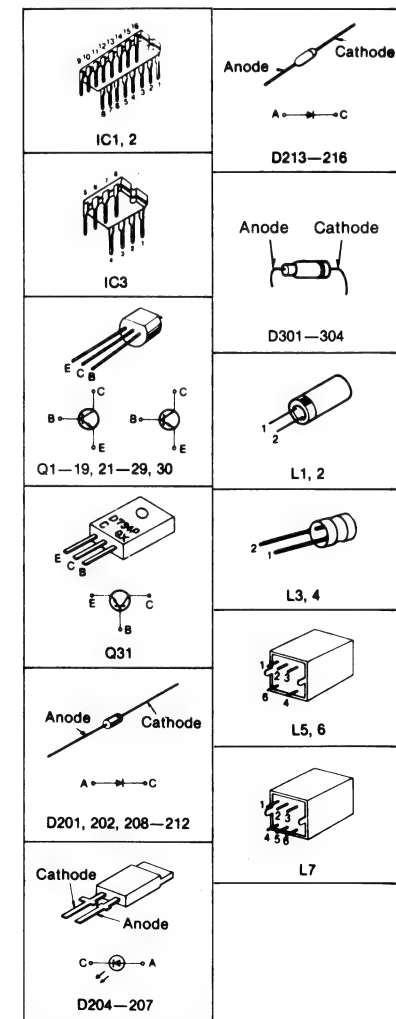
- S1-1-S1-14.....Record/Playback select switch (shown in playback position).
- S2-1-S2-2Dolby NR IN/OUT select switch (shown in out position).
- S3.....Auto tape select switch (shown in Normal position).
- S4.....Auto tape select switch.
(1...Metal position, 2...Normal position, CrO₂ position)
- S5.....Muting switch.
- S6.....FF/Rewind muting switch.
- S7.....Power ON/OFF switch.
- S8.....AC power voltage select switch.
* For Asia, Latin America, Middle East and Africa areas.
- VR1, 2Playback gain adjustment VR.
- VR3, 4Input level controls.
- VR5, 6Overall gain adjustment VR.
- VR201, 202Bias current adjustment VR.
- Connection points (A) and (B).....For erase current adjustment.
- Resistance are in ohms (Ω), 1/4 watt unless specified otherwise.
1K = 1,000Ω, M = 1,000KΩ.
- Capacity are micro farads (μF) unless specified otherwise.
- P = Pico-farads.
- The mark (▼) shows test point. e.g. ▼ = Test point 1.
- (▶) this arrow indicates the flow of the playback signal.
- (◀) this arrow indicates the flow of the recording signal.
- All voltage values shown in circuitry are under no signal condition.
- Unless otherwise specified, voltage measurement conditions are the tape travel is at PLAY, tape mode at NORMAL, and Dolby NR switch at OFF.
- NorVoltage at normal tape mode
- CrO₂Voltage at CrO₂ tape mode
- MetVoltage at Metal tape mode
- Cue/RevVoltage at cue/Review mode
- StopVoltage at stop mode
- For measurement, use VTVM.
- Important safety notice
- Components identified by Δ mark have special characteristics important for safety.
- When replacing any of these components, use only manufacturer's specified parts.
- Described in the schematic diagram are two types of number; the supply parts number and production parts number for transistors and diodes. One type of number is used for supply parts number and production parts number when they are identical.
- e.g. Q1
{ 2SC1327(S,T) — Production parts number
{ 2SC1328 — Supply parts number
D208
{ 1S2473T77 — Production parts number
{ MA161 — Supply parts number
- The supply parts number is described alone in the replacement parts list.
-For all European areas except United Kingdom.
- NFor Asia, Latin America, Middle East and Africa areas.

* This schematic diagram may be modified at any time with the development of new technology.

EQUIVALENT CIRCUIT

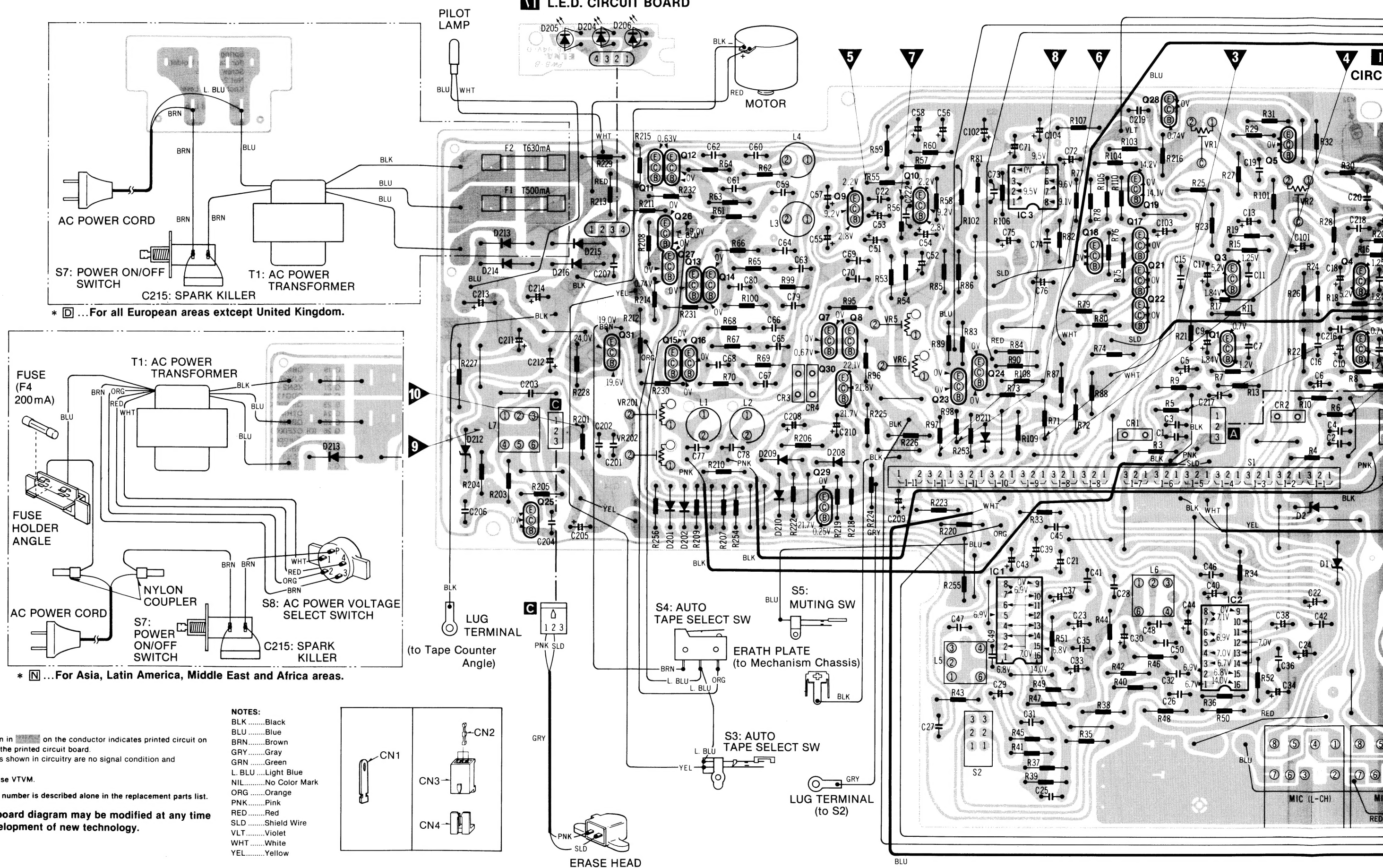


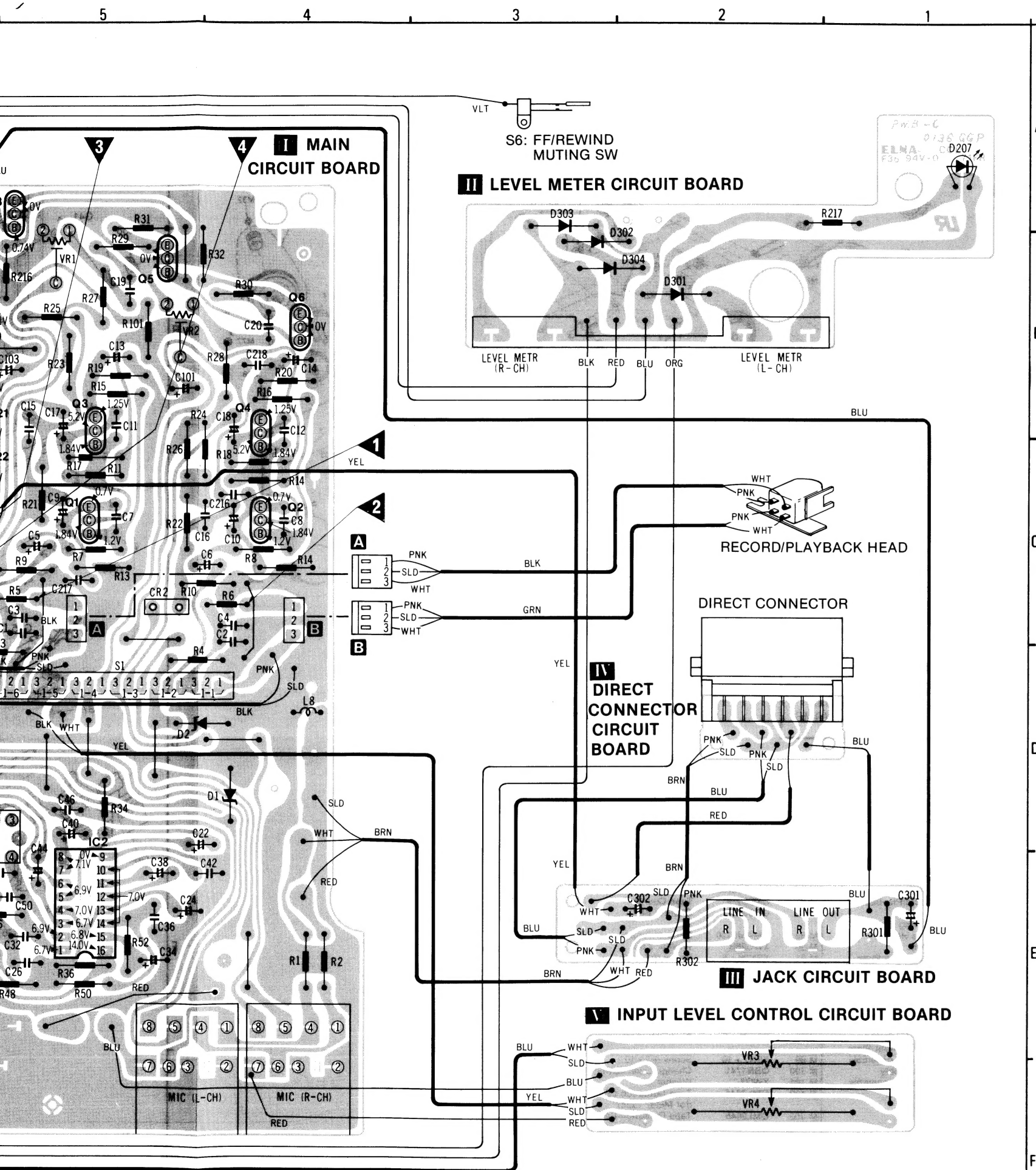
TERMINATIONS



CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM

VI L.E.D. CIRCUIT BOARD





ELECTRICAL PARTS LIST

NOTES: RESISTORS

ERD.....Carbon
 ERG.....Metal-oxide
 ERS.....Metal-oxide
 ERO.....Metal-film
 ERX.....Metal-film
 ERQ.....Fuse type metallic
 ERC.....Solid
 ERF.....Cement

CAPACITORS

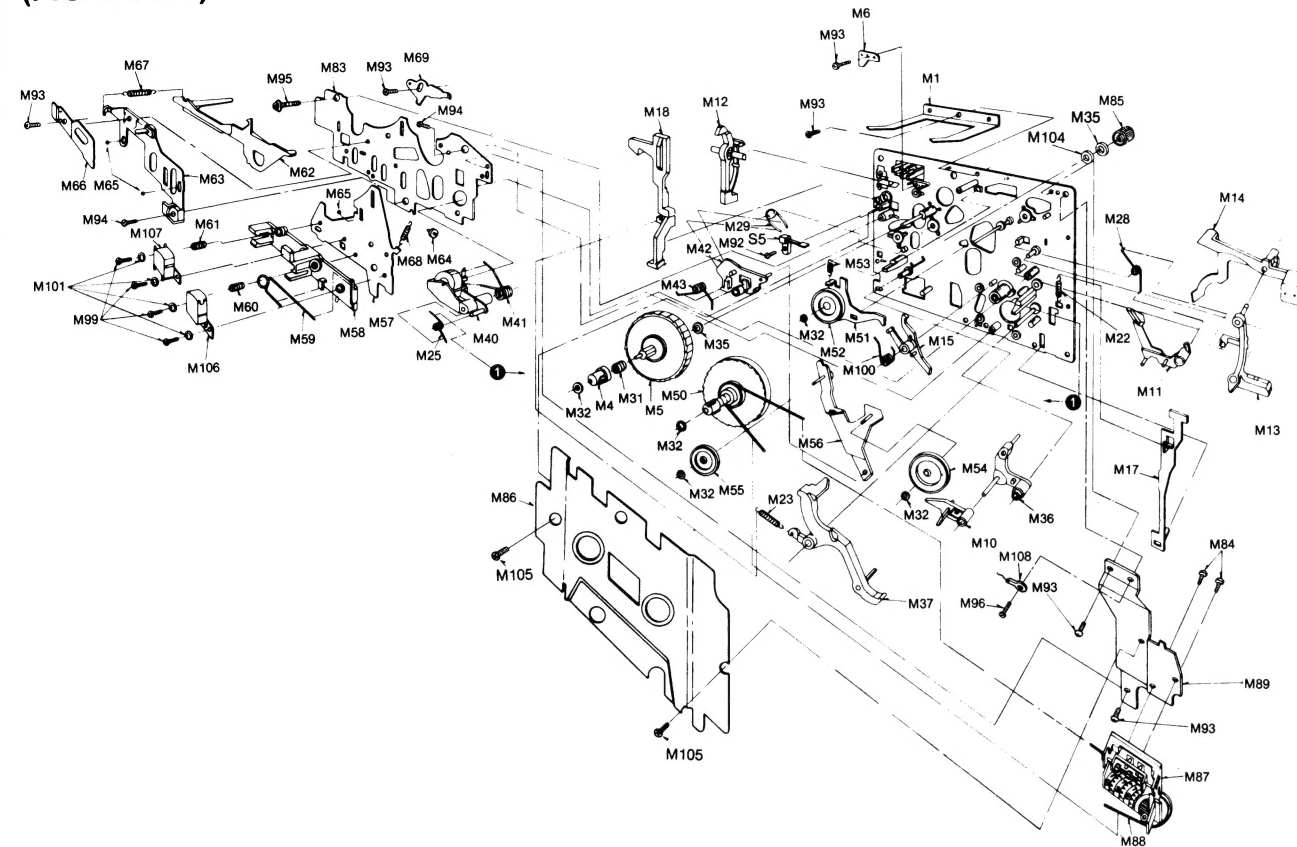
ECBA.....Ceramic
 ECGD.....Ceramic
 ECKD.....Ceramic
 ECCD.....Ceramic
 ECFO.....Ceramic
 ECQM.....Polyester film
 ECQE.....Polyester film
 ECQF.....Polypropylene
 ECED.....Electrolytic
 ECEON.....Non polar electrolytic
 ECQS.....Polystyrene
 ECSQ.....Tantalum
 QCS.....Tantalum

REPLACEMENT PARTS LIST

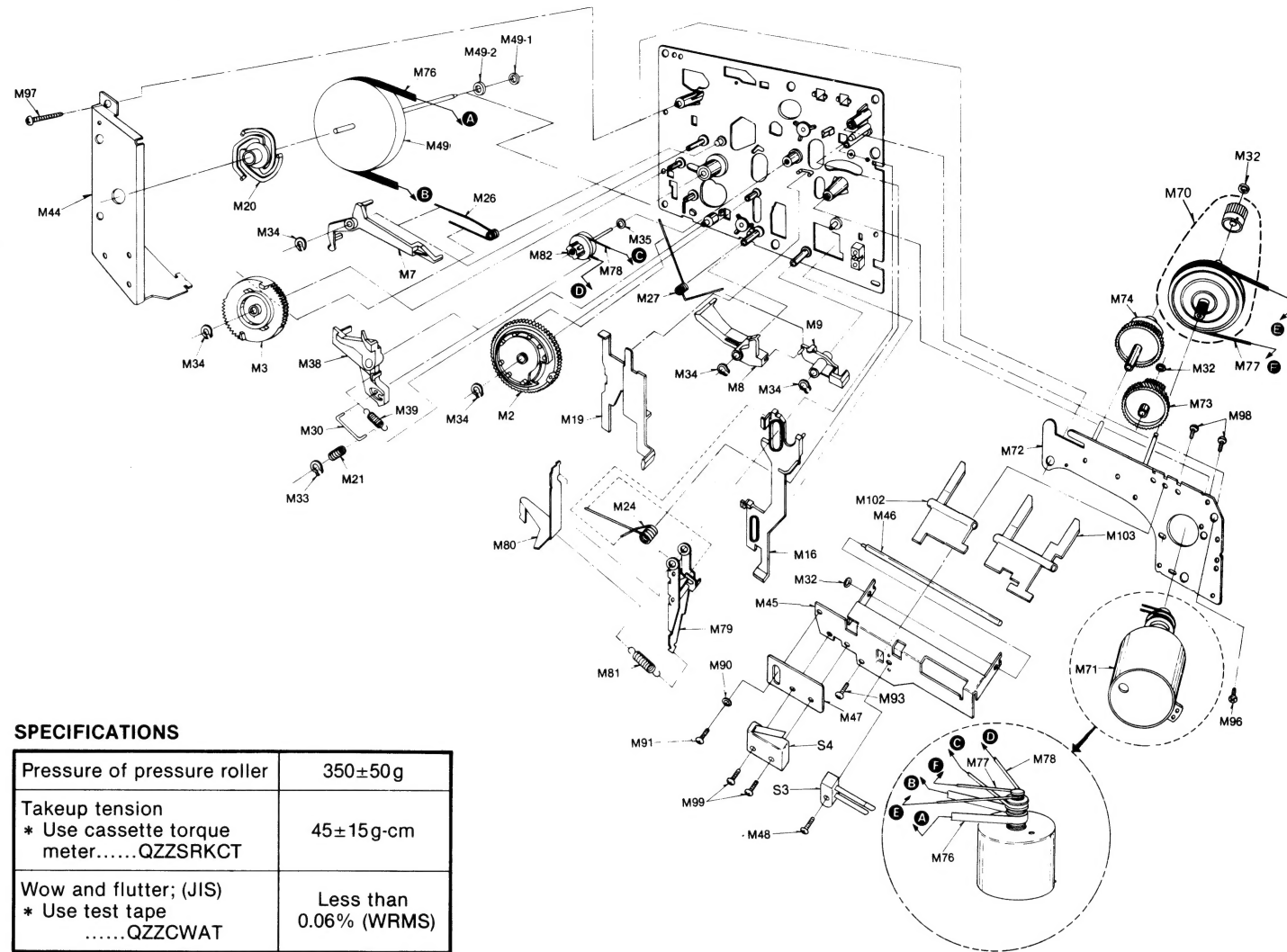
Important safety notice
 Components identified by Δ mark have special characteristics important for safety.
 When replacing any of these components, use only manufacturer's specified parts.

Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Part Name & Description
RESISTORS				COILS				
R 1, 2	ERD25TJ273	R 214, 215	ERD25FJ103	C 47, 48	ECCD1H560J	L 1, 2	QLQX0343KWA	Coil (Bias Trap)
R 3, 4	ERD25FJ103	R 216	ERD25FJ682	C 49, 50	ECQP1392JZ	L 3, 4	QLQX2421Y	Peaking Coil
R 5, 6	ERD25FJ100	R 217	ERD25FJ222	C 51, 52, 53		L 5, 6	SLM1219	Coil (Multiplex)
R 7, 8	ERD25FJ181	R 218	ERD25TJ333	C 54	ECEA50ZR68	L 7	QLB0198	Coil (Bias Oscillation)
R 9, 10	ERD25FJ560	R 219	ERD25TJ224	C 55	ECEA50ZR68	TRANSFORMERS		
R 11, 12	ERD25TJ104	R 220	ERD25FJ222	C 56	ECEA50ZR68	T 1	[D] Δ QLPD72EKE	AC Power Transformer
R 13, 14	ERD25FJ682	R 222 [D]	ERD2FCG121	C 57, 58	ECEA1CS330	[For all European areas except United Kingdom]		
R 15, 16	ERD25TJ104	[For all European areas except United Kingdom]		C 59, 60	ECQM1H822JZ	[N] Δ QLPN75EKE AC Power Transformer		
R 17, 18	ERD25FJ472	[N] ERD25FJ121		C 61, 62, 63, 64, 65, 66	ECQM1H393JZ	[For Asia, Latin Aamerica, Middle East and Africa areas]		
R 19, 20	ERD25FJ821	[For Asia, Latin Aamerica, Middle East and Africa areas]		C 69, 70	ECKD1H152KB	FUSES		
R 21, 22	ERD25TJ124	R 223	ERD25FJ272	C 71, 72	ECEA50Z1	F 1	[D] Δ XBAQ0003	Fuse (T 500mA)
R 23, 24	ERD25FJ472	R 224	ERD25FJ102	C 73, 74	ECED1H100J	[For all European areas except United Kingdom]		
R 25, 26	ERD25TJ393	R 225	ERD25FJ562	C 75, 76	ECEA1CS330	F 2	[D] Δ XBAQ0008	Fuse (T 630mA)
R 27, 28	ERD25FJ472	R 226	ERD25FJ562	C 77, 78	ECED1H121K	[For all European areas except United Kingdom]		
R 29, 30	ERD25FJ562	R 227	ERD25TJ123	C 101	ECEA1CS221	F 4	[N] Δ XBA2E02NM5U	Fuse (200mA)
R 31, 32	ERD25TJ104	[D] Δ ERG1ANJ101		C 102	ECEA1ES101	[For Asia, Latin Aamerica, Middle East and Africa areas]		
R 33, 34, 35, 36	ERD25FJ102	[For all European areas except United Kingdom]		C 103	ECEA50Z3R3	SWITCHES		
R 37, 38	ERD25TJ105	[N] ERD50FJ101		C 104	ECEA50Z1	S 1	QSSE203	Switch (Record/Playback Selector)
R 39, 40	ERD25FJ332	[For Asia, Latin Aamerica, Middle East and Africa areas]		C 201, 202	ECKD1H181KB	S 2	QSW2232	Switch (Dolby IN/OUT)
R 41, 42	ERD25TJ474	R 228	Δ ERD25FJ102	C 203	ECQF6332KZ	S 3	QSB0253	Switch (Auto Tape Selector)
R 43, 44	ERD25FJ181	R 229	Δ ERD25FJ470	C 204	ECQM1H153JZ	S 4	AH32229	Micro Switch (Auto Tape Selector)
R 45, 46	ERD25TJ473	R 230, 231, 232	ERD25FJ103	C 205	ECEA1ES101	S 5	QSB0251	Switch (REC-MUTE ON/OFF)
R 47, 48	ERD25FJ102	R 253	ERD25FJ102	C 206	ECQM1H822JZ	S 6	QSB0251	Switch (for Forward/Rewind Muting)
R 49, 50	ERD25TJ184	R 254 [D]	ERD2FCG680	C 207	ECKD1H103KB	S 7	Δ QSW1117AS	Switch (Power ON/OFF)
R 51, 52	ERD25TJ274	[For all European areas except United Kingdom]		C 208	ECEA1JS220	S 8	[N] Δ QSR1407H	Rotary Switch (AC Power Voltage Selector)
R 53, 54	ERD25FJ392	[N] ERD25FJ560		C 209	ECEA50Z2R2	[For Asia, Latin Aamerica, Middle East and Africa areas]		
R 55, 56	ERD25TJ684	[For Asia, Latin Aamerica, Middle East and Africa areas]		C 210	ECEA1VS221	JACKS		
R 57, 58	ERD25FJ272	R 255	ERD25FJ102	C 211	Δ ECEA1CS221	J 1, 2	QJA0253	Jack (Microphone)
R 59, 60	ERD25FJ681	R 256 [D]	ERD25FJ330	C 212	ECEA1ES101	J 3, 4, 5, 6	SJF3053	Jack Board (LINE IN/OUT)
R 61, 62	ERD25FJ330	[For all European areas except United Kingdom]		C 213	ECEA1VSS471	CONNECTORS		
R 63, 64	ERD25FJ470	[N] ERD25FJ470		C 214	ECEA1CS471	CN 1	QJT0053	Check Pin
R 65, 66	ERD25FJ332	[For Asia, Latin Aamerica, Middle East and Africa areas]		C 215	ECQU2A103MF	CN 2	QJT1054	Contact
R 67, 68	ERD25FJ272	R 301, 302	ERD25TJ683	C 216, 217, 218	ECED1H560J	CN 3	QJS1921TN	Socket (3Pin)
R 69, 70	ERD25FJ122	VARIABLE RESISTORS		C 221, 222	ECED1H101K	CN 4	QJP1921TN	Post (3Pin)
R 71, 72	ERD25FJ681	VR 1, 2	EVNM4AA00B24	C 301, 302	ECEA25Z4R7	DIODES & RECTIFIERS		
R 73, 74	ERD25TJ273	VR 3, 4	QVAD1AU10A24	COMBINATION PARTS		D 1, 2	RD6R8EB2	
R 75, 76	ERD25FJ220	VR 5, 6	EVNM4AA00B24	CR 1, 2	EXRP102K472W	D 201	SM112	
R 77, 78	ERD25TJ333	VR 201, 202	EVNM4AA00B15	CR 3, 4	EXRP122K682W	D 202	MA161	
R 79, 80	ERD25FJ102	CAPACITORS		TRANSISTORS		D 204	TLG205	
R 81, 82	ERD25TJ104	C 1, 2	ECKD1H471KB	Q 1, 2	2SC1844E	D 205	TLY205	
R 87, 88	ERD25FJ102	C 5, 6	ECEA16M10R	Q 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18	2SC945-Q	D 206, 207	TLR205	
R 89, 90	ERD25FJ152	C 7, 8	ECKD1H102KB	Q 19	2SA1115	D 208, 209, 210, 211	Δ MA161	
R 95, 96	ERD25TJ563	C 9, 10	ECEA1CS330	Q 21, 22	2SD471	D 212	Δ RD20EB3	
R 97, 98	ERD25FJ272	C 11, 12	ECED1H470J	Q 23, 24	2SC945-Q	D 213, 214, 215, 216	Δ SM112	
R 99, 100	ERD25FJ682	C 13, 14	ECEA1CS330	Q 25	2SD471	D 301, 302, 303, 304	OA90M	
R 101	ERD25FJ561	C 15, 16	ECQV05273JZ	Q 26, 27, 28, 29	2SC945-Q	INTEGRATED CIRCUITS		
R 102 [D]	ERG1ANJ221	C 17, 18	ECEA1HS100	Q 30	2SA1115	IC 1, 2	NE646N	
[For all European areas except United Kingdom]		C 19, 20	ECQM1H123JZ	Q 31	2SD794	IC 3	AN6552	
[N] ERD25FJ221		C 21, 22	ECEA50MR33R					
[For Asia, Latin Aamerica, Middle East and Africa areas]		C 23, 24	ECEA1AS221					
R 103	ERD25FJ222	C 25, 26	ECQV05273JZ					
R 104	ERD25FJ103	C 27, 28	ECQM1H562JZ					
R 105	ERD25FJ222	C 29, 30	ECEA1HS100					
R 106, 107	ERD25TJ683	C 31, 32	ECQM1H472JZ					
R 108	ERD25FJ182	C 33, 34	ECEA50ZR33					
R 109	ERD25FJ472	C 35, 36	ECQV05104JZ					
R 110	ERD25FJ562	C 37, 38	ECEA1HS100					
R 201	ERD25FJ1R0	C 39, 40	ECEA25Z4R7					
R 203, 204	ERD25FJ562	C 41, 42	ECQM1H473JZ					
R 205	ERD25FJ100	C 43, 44	ECEA25Z4R7					
R 206	ERD25FJ102							
R 207	ERD25FJ220							
R 208	ERD25FJ182							
R 209	ERD25FJ471							
R 210	ERD25FJ391							
R 211	ERD25FJ122							
R 212	ERD50FJ102							
R 213	ERD25FJ222							

MECHANICAL PARTS LOCATION (Front View)



(Rear View)



When servicing this mechanism unit, refer to the disassembly notes and assembly instructions described in the service manuals of RS-M51, RS-M13, RS-M14 and RS-M04 (RS-M24 mechanism series).

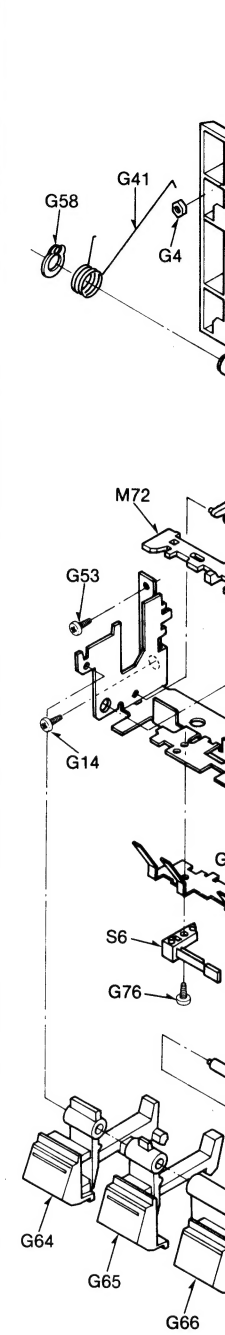
SPECIFICATIONS

Pressure of pressure roller	350±50g
Takeup tension * Use cassette torque meter.....QZZSRKCT	45±15g-cm
Wow and flutter; (JIS) * Use test tapeQZZCWAT	Less than 0.06% (WRMS)

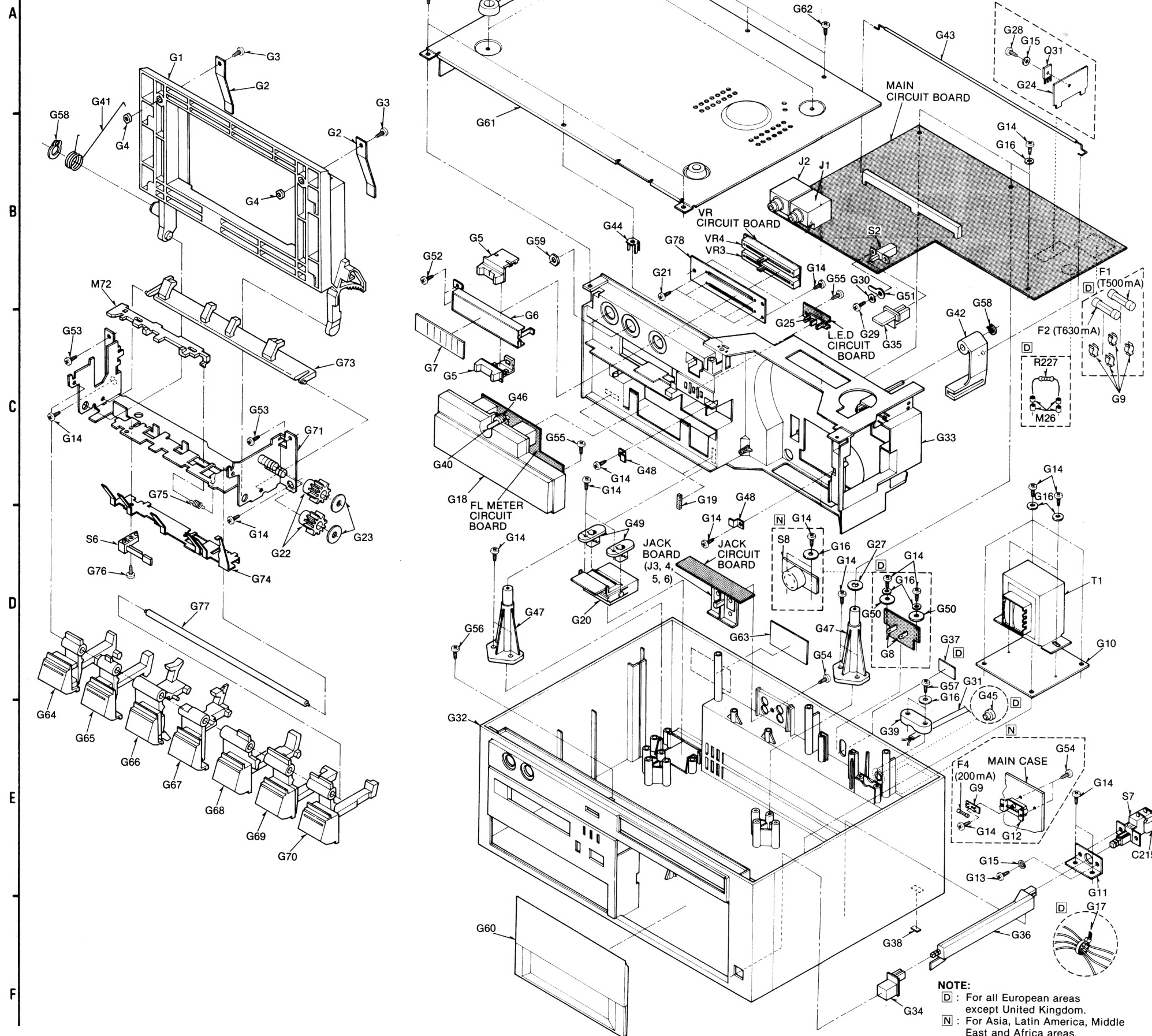
REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
MECHANICAL PARTS											
M 1	QBP1874	Cassette Pressure Spring	M 27	QBN1802	Main Gear Spring	M 55	QX10112	Rewind Idler Assembly	M 81	QBT1895	Record/Playback Selection Lever Spring
M 2	QDG1201	Main Gear	M 28	QBN1746	Auto-Stop Lever Spring	M 56	QXL1383	Fast Forward Arm Assembly	M 82	QXP0607	Fast Forward Connection Pulley Assembly
M 3	QDG1202	Sub Gear	M 29	QBN1747	Connection Spring	M 57	QMK1840	Head Base Plate	M 83	QMK1838	Upper Base Plate
M 4	QMB1336	Supply Reel Table Hub	M 30	QBS1128	Lock Pin	M 58	QMZ1241	Head Spacer	M 84	XSN3 + 5S	Screw ③×5
M 5	QDR1139	Supply Reel Table	M 31	QBC1372	Reel Table Spring	M 59	QBN1740	Head Pressure Spring	M 85	QDP1828	Fast Forward Pulley
M 6	QMF2118	Fast Forward Arm Bracket	M 32	QBW2008	Poly Washer 2φ	M 60	QBC1278	Head Spring (for Record/Playback Head)	M 86	QXH0357H	Chassis Cover Assembly
M 7	QML3581	Sub Control Lever	M 33	XUB4FT	Stop Ring 4φ	M 61	QBCA0008	Head Spring (for Erase Head)	M 87	QXC0079	Tape Counter
M 8	QML3583	Main Control Lever	M 34	XUB3FT	Stop Ring 3φ	M 62	QML3591	Brake Arm	M 88	QDB0207	Counter Belt
M 9	QML3584	Record Reverse Lever	M 35	QBW2012	Poly Washer	M 63	QMZ1240	Sub Head Base Plate			
M 10	QML3586	Head Base Plate Lift Lever	M 36	QXL1354	Sub Lever Assembly	M 64	QMN2550	Roller	M 89	QMAM0150	Counter Angle
			M 37	QXL1355	Main Lever Assembly	M 65	QDK1017	Steel Ball 2φ	M 90	XWC26B	Washer 2.6φ
			M 38	QML3582	Pause Lock Lever	M 66	QBP1873	Head Base Plate Pressure Spring	M 91	XSN26 + 6	Screw ②.6×6
			M 39	QBT1896	Lever Release Spring				M 92	XTN2 + 6B	Tapping Screw ②×6
			M 40	QXL1381	Pressure Roller Assembly				M 93	XTN26 + 6B	Tapping Screw ②.6×6
									M 94	XTN26 + 10B	Tapping Screw ②.6×10
M 11	QML3594	Auto-Stop Release Arm	M 41	QBN1743	Pressure Roller Spring	M 67	QBT1597	Brake Arm Spring	M 95	XTN26 + 12B	Tapping Screw ②.6×12
M 12	QML3603	Erase Safety Lever	M 42	QML3588	Fast Forward Lever	M 68	QBT1892	Head Release Spring	M 96	XTN3 + 10	Tapping Screw ③×10
M 13	QML3604	Auto-Stop Driving Lever	M 43	QBN1748	Fast Forward Spring				M 97	XTN3 + 24	Tapping Screw ③×24
M 14	QML3605	Auto-Stop Detection Lever	M 44	QMA4063	Flywheel Retainer	M 69	QMA3858	Head Adjustment Plate	M 98	XSN26 + 3	Screw ②.6×3
M 15	QML3592	Change Lever	M 45	QMA3920	Detection Lever Angle	M 70	QZL0241	Takeup Gear Assembly			
M 16	QMR1820	Record Rod	M 46	QMS2546	Detection Lever Shaft	M 71	QXU0170	Motor Assembly	M 99	XSN2 + 10	Screw ②×10
M 17	QMR1821	Auto-Stop Connection Rod	M 47	QMF1682	Switch Retaining Plate	M 72	QXK2286	Sub Chassis Assembly	M 100	QBN1741	Change Lever Spring
M 18	QMR1822	Eject Rod	M 48	XSN2 + 6	Screw ②×6	M 73	QDG1199	Auto-Stop Gear	M 101	XWG2	Washer 2φ
M 19	QMR1824	Control Rod	M 49	QXF0164	Flywheel Assembly	M 74	QDG1200	Cam Gear	M 102	QML3644	Tape Detection Lever-A (for Metal Tape)
M 20	QMZ1239	Flywheel Thrust Retainer	M 49-1	QBW2049	Poly Washer	M 75	QDB0281	Capstan Belt			
						M 76	QDB0281	Takeup Belt	M 103	QML3645	Tape Detection Lever-B (for CrO ₂ Tape)
M 21	QBC1357	Lock Pin Pressure Spring	M 49-2	QBW2026	Washer	M 77	QDB0274	Fast Forward Belt			
M 22	QBT1682	Auto-Stop Connection Rod Spring	M 50	QXD1143	Assembly	M 78	QDB0273	Record/Playback Selection Arm	M 104	QBW2085	Poly Washer
M 23	QBT1894	Main Lever Spring				M 79	QXL1360	Record/Playback Selection Lever	M 105	XTN26 + 6BFZ	Tapping Screw ②.6×6
M 24	QBN1739	Selection Lever Spring	M 51	QXL1382	Idler Lever Assembly				M 106	QWY4122Z	Record/Playback Head
M 25	QBN1742	Pressure Roller Release Spring	M 52	QX10111	Takeup Idler Assembly				M 107	QWY2138Z	Erase Head
			M 53	QBT1893	Takeup Idler Spring				M 108	QTD1001	Lug Terminal
M 26	QBN1744	Sub Gear Spring	M 54	QX10113	Fast Forward Idler Assembly						

CABINET



CABINET PARTS LOCATION



REPLACEMENT PARTS LIST

Important safety notice
Components identified by Δ mark have special characteristics important for safety.

Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
CABINET PARTS			G 51	QTD1317	Lug Terminal
G 1	QKFM6007K	Cassette Holder	G 52	XTN26 + 8B	Tapping Screw $\phi 2.6 \times 8$
G 2	QBP1899	Spring (for Cassette Holder)	G 53	XTN26 + 6B	Tapping Screw $\phi 2.6 \times 6$
G 3	XSN2 + 5	Screw $\phi 2 \times 5$	G 54	XTB3 + 10BFZ	Tapping Screw $\phi 3 \times 10$
G 4	XNG2E	Nut 2 ϕ	G 55	XTN3 + 8B	Tapping Screw $\phi 3 \times 8$
G 5	QYK0141	Knob (Input Level control)	G 56	XTN3 + 12B	Tapping Screw $\phi 3 \times 12$
	"Silver Type"		G 57	XTN3 + 16B	Tapping Screw $\phi 3 \times 16$
	QYK0141S	Knob (Input Label Control)	G 58	XUB5FT	Stop Ring 5 ϕ
	"Black Type"		G 59	QNO1070	Nut (for J1, 2)
G 6	QGG0201	Guide (for Input Knob)	G 60	QYFM0065	Cassette Lid Assembly
G 7	QGBM0023	VR Indicate Plate		"Silver Type"	
	"Silver Type"			QYFM0065K	Cassette Lid Assembly
	QGBM0023K	VR Indicate Plate		"Black Type"	
	"Black Type"		G 61	QYBM0046	Bottom Cover Assembly
G 8 [D] Δ SJT777	Terminal		G 61-1	QKA1083	Rubber Foot
[For all European areas except United Kingdom]			G 61-2	QHJ1313	Step Screw
G 9 [D] Δ QTF1054	Fuse Holder		G 62	XTN3 + 10BFN	Tapping Screw $\phi 3 \times 10$
[For all European areas except United Kingdom]			G 63 [D]	QGS0186	Main Name Plate
[N] Δ QTF1051	Fuse Holder		[For all European areas except United Kingdom]		
[For Asia, Latin Aamerica, Middle East and Africa areas]			[N] Δ QGS0188	Main Name Plate	
			[For Asia, Latin Aamerica, Middle East and Africa areas]		
G 10	QMFM0016	Transformer Holder	G 64	QXL1493	Lever Assembly
G 11	QMAM0123	Angle (for S7)		"Silver Type"	(with Eject Button)
G 12 [N] Δ QKJM0086	Fuse Holder Angle			QXL1581	Lever Assembly
[For Asia, Latin Aamerica, Middle East and Africa areas]				"Black Type"	(with Eject Button)
G 13	XSN3 + 6S	Screw $\phi 3 \times 6$	G 65	QXL1494	Lever Assembly
G 14	XTN3 + 10B	Tapping Screw $\phi 3 \times 10$		"Silver Type"	(with REC Button)
G 15	XWA3B	Washer 3 ϕ		QXL1582	Lever Assembly
G 16	XWG3	Washer 3 ϕ	G 66	QXL1495	Lever Assembly
G 17 [D]	QTD1315	Cord Clamper		"Silver Type"	(with REW Button)
[For all European areas except United Kingdom]				QXL1583	Lever Assembly
G 18	QSL2010RNM	Level Meter		"Black Type"	(with REW Button)
"Silver Type"			G 67	QXL1496	Lever Assembly
	QSL2012RNM	Level Meter		"Silver Type"	(with FF Button)
"Black Type"				QXL1584	Lever Assembly
G 19	QBMM0020	Cushion (for FL Meter)		"Black Type"	(with FF Button)
G 20	SJS9607	Direct Connector	G 68	QXL1497	Lever Assembly
G 21	XSN2 + 3	Screw $\phi 2 \times 3$		"Silver Type"	(with Play Button)
G 22	QDG1102	Gear (for Cassette Holder)		QXL1585	Lever Assembly
G 23	QBW2082	Washer		"Black Type"	(with Play Button)
G 24	QTHM0011	Heat Sink	G 69	QXL1498	Lever Assembly
G 25	QBKM0029	Spacer		"Silver Type"	(with Stop Button)
G 26 [D]	QZE0003	Porcelain Tube		QXL1586	Lever Assembly
[For all European areas except United Kingdom]				"Black Type"	(with Stop Button)
G 27	QBKM0031	Washer	G 70	QXL1499	Lever Assembly
G 28	XSN3 + 8S	Screw $\phi 3 \times 8$		"Silver Type"	(with Pause Button)
G 29	XSN2 + 4	Screw $\phi 2 \times 4$		QXL1587	Lever Assembly
G 30	XWA2B	Washer 2 ϕ		"Black Type"	(with Pause Button)
G 31	[D] Δ SJA88	AC Power Cord	G 71	QXA1044	Angle Assmly (for Operation Button)
[For all European areas except United Kingdom]			G 72	QMR1823	Rod (for Lever Obstraction)
[N] Δ RJA522BK	AC Power Cord		G 73	QML3593	Lever (for Lock)
[For Asia, Latin Aamerica, Middle East and Africa areas]			G 74	QBP1875	Spring-A (for Obstraction Rod)
G 32	QKMM0042S	Main Case			(for Obstraction Rod)
"Silver Type"			G 75	QBT1597	Spring-B (for Obstraction Rod)
QKMM0042K	Main Case		G 76	XTN2 + 6B	Tapping Screw $\phi 2 \times 6$
"Black Type"			G 77	QMN2554	Shaft (for Operation Button)
G 33	QKJM0076	Mechanism Chassis	G 78	QMF00019	Angle (for VR3, 4)
G 34	QGOM0086	Push Button (Power)			
G 35	QGOM0087	Push Button (Dolby)			
G 36	QKJM0046	Power Button Rod			
G 37 [D]	QGKM0182	Switch Shelter			
"Silver Type"					
[For all European areas except United Kingdom]					
[D] Δ QGKM0182K	Switch Shelter		A 1	SHE135	Fixing Pin
"Black Type"				"Silver Type"	
[For all European areas except United Kingdom]				SHE135-1	Fixing Pin
G 38	QGBM0027	Caution Plate		"Black Type"	
"Silver Type"			A 2 [D] Δ QQT3413	Instruction Book	
QGBM0027K	Caution Plate		[For all European areas except United Kingdom]		
"Black Type"			[N] Δ QQT3414	Instruction Book	
G 39 [D]	QTD1164	Cord Clamper	[For Asia, Latin America, Middle East and Africa areas]		
[For all European areas except United Kingdom]			A 3 [N] Δ QJP0603S-1	AC Plug Adaptor	
[N] Δ QTD1129	Cord Bushing		[For Asia, Latin America, Middle East and Africa areas]		
[For Asia, Latin Aamerica, Middle East and Africa areas]					
G 40	XAMQ23P300N	Pilot Lamp (12V 0.05A)			
G 41	QBN7008	Spring (Cassette Holder)			
G 42	QMLM0041	Recording Lever			
G 43	QBSM0007	Recording Wire	P 1 [D]	QPNM0196	Inner Carton
G 44	QTSM0045	Earth Plate	[For all European areas except United Kingdom.]		
G 45 [D]	QBJ1425	Cord Bushing	P 1 [N]	QPNM0195	Inner Carton
[For all European areas except United Kingdom]			[For Asia, Latin America, Middle East and Africa areas.]		
G 46	QBG1366	Rubber Cushion	P 2	QPAM0052	Cushion
G 47	QKJM0079	Angle (for P.C.B)	P 3	XZB40X50A02	Poly Sheet (for Unit)
G 48	QMAM0129	Stopper	P 4	PPQ1052	Poly Sheet (for AC Power Cord)
G 49	QKJM0077	Socket Plate			
G 50 [D]	QBK7178	Washer	P 5 [D]	QPSM0009	Pad
[For all European areas except United Kingdom]			[For all European areas except United Kingdom]		

ACCESSORIES

A 1	SHE135	Fixing Pin
	"Silver Type"	
	SHE135-1	Fixing Pin
	"Black Type"	
A 2 [D]	QQT3413	Instruction Book
[For all European areas except United Kingdom]		
[N] Δ QQT3414	Instruction Book	
[For Asia, Latin America, Middle East and Africa areas]		
A 3 [N] Δ QJP0603S-1	AC Plug Adaptor	
[For Asia, Latin America, Middle East and Africa areas]		

PACKINGS

P 1 [D]	QPNM0196	Inner Carton
[For all European areas except United Kingdom]		
P 1 [N]	QPNM0195	Inner Carton
[For Asia, Latin America, Middle East and Africa areas]		
P 2	QPM0052	Cushion
P 3	XZB40X50A02	Poly Sheet (for Unit)
P 4	QPQ1052	Poly Sheet
		(for AC Power Cord)
P 5 [D]	QPSM0009	Pad
[For all European areas except United Kingdom]		

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